

Kieffner Sells \$10,000 Worth of Appliances In His Spare Time

JASPER, Ind.—During the last six years, Robert Kieffner has sold over \$10,000 worth of Crosley products in this town of about 3,900 people—and all in his spare time.

Mr. Kieffner is regularly employed as a foreman in the Jasper Chair Co.'s plant, but after working hours and on Saturdays and Sundays he sells Crosley products.

Ninety of 110 employees of the chair factory have bought Crosley radios from him. Many of these same employees also have purchased refrigerators and washers. He has sold an electric refrigerator to each of three men in the bank where he does business.

Kieffner has arranged for display space with a downtown automobile accessory store, assuring his name and his products a prominent place in the public eye.

St. Joseph Refrigerator Men Hold Meeting

ST. JOSEPH, Mo.—First of a series of fall and winter meetings of refrigerator men was held here Oct. 14 under the chairmanship of H. O. Bruess, Bristol Supply Co.

Austin Jones, factory representative of Kerotest Mfg. Co., United Wire & Supply Corp., and Rotary Seal Co., addressed the meeting, covering in detail all of these manufacturers' products. An open forum followed.

Shop Practice Included

Nothing has been overlooked to make U. E. I. training thorough and practical in every respect.

Following the spare time home study that gives the principles of refrigeration and their practical application to ALL TYPES of equipment, U. E. I. men get two weeks of actual servicing and installing experience on all types of household and commercial refrigerating equipment.

U. E. I. trained men are fully trained. Some are available NOW.

Utilities

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LIFETIME COILS AND UNITS

REFRIGERATION APPLIANCES, INC.

1342 W. Lake Street, Chicago

COMMONWEALTH FITTINGS

Built Right to Stay Tight



COMMONWEALTH BRASS CORPORATION
COMMONWEALTH AVE AND 6TH ST.
DETROIT

BARLUM HOTEL

WHERE OLD-FASHIONED HOSPITALITY AWAITS YOU



DETROIT

CADILLAC SQUARE
BATES STREET

810 OUTSIDE ROOMS
\$2 A DAY AND UP

G-E Using Talking Water Cooler to Promote Sales

CLEVELAND—Three new appliance displays, demonstrating features of General Electric devices, have recently been made available to G-E home appliance outlets.

First of these displays is the "Talking Water Cooler." This exhibit consists of a standard pressure water cooler, photo-cell controlled. When an individual steps up to the cooler, breaking the circuit of the light beam, the water flows from the cooler automatically and a sound recording device attached to the cooler says, "Have a drink of water on General Electric."

When the individual has finished, the voice exclaims, "Ah, that's good water. It's cooled by G-E." There are 24 such recorded sayings before the record repeats itself.

The "Door Slam Display" consists of a device with a boxing glove on an iron arm, operated by an electric motor.

The boxing glove strikes the open door of a G-E refrigerator, slamming the door shut. The door is opened by a mechanical device, and the operation repeated over and over again, typifying one of the many factory tests on G-E refrigerators.

The Disposal action exhibit consists of a Disposal unit installed in a cutaway sink, and arranged in such a manner that the Disposal operates automatically and intermittently. This is especially arranged for display purposes so that no external plumbing is required, making it easy to use on a sales floor or in a show window. Certain portions of the unit are constructed of glass, so that the mechanism is clearly visible. The display shows the method in which food wastes are scraped into the Disposal, ground into pulp, and washed down the drain.

Other G-E displays available to dealers include the "Drowned in Water" exhibit, showing a G-E refrigerator mechanism operating while immersed in an illuminated glass tank filled with water, and the miniature sectional kitchen consisting of 22 miniature pieces which can be arranged in various order to suit the individual prospect's requirements.

All displays were designed by C. O. Hamlin of the specialty appliance sales division.

Hamlin last year received the Coffin Award for his original creative display accomplishments.

Questions

Majestic Service Data

No. 2951 (Serviceman, Iowa)—"Enclosed find ten cents for an August 16, 1933 issue of REFRIGERATION NEWS, describing the servicing of Majestic hermetic refrigerators.

"Would also like any information you may have on the conventional type Majestic units."

Answer: Service articles on the Majestic conventional type refrigerator were published in the Sept. 12, 19 and 26, 1934 issues of ELECTRIC REFRIGERATION NEWS. Service information on both the Majestic hermetic and Majestic conventional refrigerators is also contained in the MASTER SERVICE MANUAL.

Portable Conditioners

No. 2952 (Manufacturer's agent, Texas)—"I am just wondering if you are in position to furnish us with a list of manufacturers of portable air-conditioning units. We mean small units that can be used in the home. We are not at all interested in the large units for commercial installation. We would like to make a study of this particular field and would appreciate any information we can receive on same."

Answer: Consult the July 29, 1936 issue of ELECTRIC REFRIGERATION NEWS, in which were published complete specifications of both summer and winter air-conditioning equipment.

Cold Drink Dispensers

No. 2953 (Manufacturer, New York)—"We are desirous of obtaining list of manufacturers making the equipment for dispensing of cold drinks, beer, etc."

Nema Sales of Electric Refrigerators, January Through August, 1936									
Lacquer					Porcelain				
Domestic	Canadian	Foreign	Total		Domestic	Canadian	Foreign	Total	
Jan. 78,411	383	5,060	83,854		16,143	31	549	16,723	
Feb. 131,211	871	7,823	139,905		23,317	50	880	24,227	
March 203,634	2,407	12,418	218,459		41,124	230	1,168	42,522	
April 229,866	3,529	12,660	246,055		44,238	343	1,234	45,815	
May 249,787	4,791	13,306	267,884		47,142	471	1,060	48,673	
June 179,556	3,476	12,626	195,658		33,003	261	1,124	34,388	
July 159,870	2,017	12,367	174,254		23,601	181	1,754	25,536	
Aug. 78,800	1,238	9,125	89,163		12,758	51	1,044	13,853	
Total 1,311,135	18,712	85,385	1,415,232		241,326	1,618	8,793	251,737	

"Do you have such a list of dispensing machine manufacturers and under what heading would they appear in your YEAR BOOK DIRECTORY?"

Answer: Manufacturers of beer and beverage cooling equipment and parts are listed on pages 167 through 173 of the 1935 REFRIGERATION AND AIR CONDITIONING DIRECTORY; manufacturers of soda fountains are listed on pages 207 of the DIRECTORY.

New manufacturers of bottled beverage coolers whose names are not included in the DIRECTORY are:

Eagle Foundry Co.

Belleville, Ill.

Pemco Manufacturing Co.

Bloomington, Ill.

Undabar Electric Beverage & Food Coolers

Division of General Import Co.

220 N. Fourth St., St. Louis, Mo.

Air Conditioning Book to Be Published Next Year

No. 2954 (Distributor, Wisconsin)—

"In your September issue of AIR CONDITIONING AND REFRIGERATION NEWS is carried an article that is taken from the book 'Air Conditioning Made Easy' by F. O. Jordan. Please advise us if it is possible to get this book and if so, please advise where it may be purchased.

"If it is possible, we would like to have you give us the names of factories that are making room-type humidifiers and also would like the names of factories that are manufacturing attic fan ventilators. Any information that you can give us will be greatly appreciated."

Answer: F. O. Jordan's book "Air Conditioning Made Easy" is being published serially in the weekly issues of AIR CONDITIONING AND REFRIGERATION NEWS. This book will not be available until some time next year, after it has been published in serial form in the NEWS.

Manufacturers of room-type humidifiers are listed on page 157 of the 1935 REFRIGERATION AND AIR CONDITIONING DIRECTORY, and manufacturers of attic ventilating fans on page 160 of the DIRECTORY.

Several additional manufacturers of humidifiers are listed in the air conditioning specifications issue (July 29, 1936) of the NEWS.

Frozen Food Packers

No. 2955 (Manufacturer, New York)

"Do you have or do you know where is obtainable, a list of packers of frozen foods?"

Answer: Write to the Birdseye Co., Boston, Mass., for any information on frozen foods.

Stores Selling Frozen Foods

No. 2956 (Fruit Importer, New York)

"We are endeavoring to get some data on the number of retail outlets equipped with cases to display and stock frozen foods—cases which will hold at about zero.

"We would appreciate any information you can give us on this subject, such as:

"The number of retail stores throughout the United States so equipped.

"The number of retail stores in the New York territory (New York and Brooklyn) so equipped.

"The number of stores thus equipped in the above-mentioned territories outside of Birdseye product distributors."

Answer: Birdseye Food Corp. can give you the number of stores now equipped to handle their products.

Oklahoma Unit Sales

No. 2957 (Manufacturer, Minnesota)

"Will you kindly let us know the number of electric refrigerators sold in Oklahoma in 1934 and in 1935 and the estimated number for 1936."

Answer: According to Nema reports, 15,170 electric refrigerators were sold in Oklahoma in 1934; 16,279, in 1935; and during the first eight months of 1936, 16,414.

Unit Sales Analyzed by Type of Exterior Finish

No. 2958 (Advertising Agency, Michigan)—"Please let us have the number of electric refrigerators of lacquer finish and of porcelain finish sold for each month so far this year."

Answer: Following is a table showing the number of lacquer finish and of porcelain finish refrigerators sold by Nema companies for each of the first eight months of this year:

The Buyer's Guide

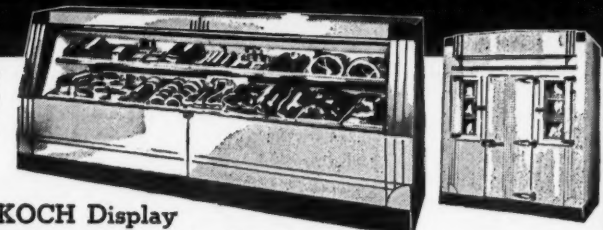
Suppliers Specializing in Service to the Refrigeration and Air Conditioning Industries

DISTRIBUTORS and SALES AGENTS

WANTED

for **KOCH COMMERCIAL REFRIGERATOR CABINETS**

Some very good territories still available



Complete Market Equipment by **KOCH**

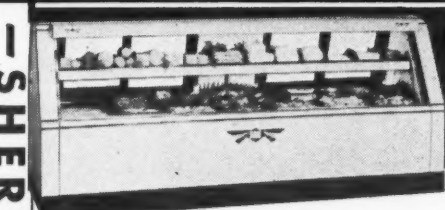
KOCH Display Cases Have 4-in. Corkboard Insulation, Triple Plate Glass, and Are Porcelain Clad

Write for full information, stating qualifications

KOCH REFRIGERATORS

North Kansas City, Mo.

SALES AGENTS & DISTRIBUTORS WANTED



Desirable territories now open. Write us for details.

SHERER-GILLET COMPANY

MARSHALL, MICHIGAN

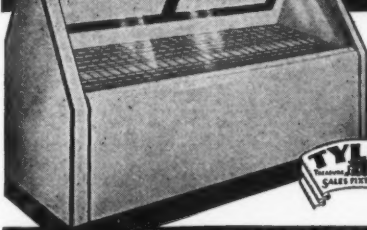
ESTABLISHED 1852

We manufacture a complete line of **DISPLAY AND STORAGE EQUIPMENT FOR RETAIL FOOD STORES**

Refrigerator Cases of all kinds, Market Coolers, Reach-in Boxes, Meat Racks, Porcelain Partitions, etc.

Use the complete Sherer line to maintain your volume and profits as the demand for household boxes tapers off. Write us today.

TYLER'S NEW WELDED STEEL REFRIGERATOR CASES



At last a general purpose case at a sensible price. Offers every advantage of the most costly cases at tremendous savings. Modern in every detail. Comes equipped with coils. Single and double duty models.

AN AMAZING VALUE

Hundreds in use. Perfect refrigeration for meat, dairy and delicatessen products and all perishables sold in food stores. Write or wire for all the facts.

TYLER Sales-Fixture CO. Dept. E, Niles, Mich.

3 INCH INSULATION-TRIPLE GLASS

Quality by WEBER

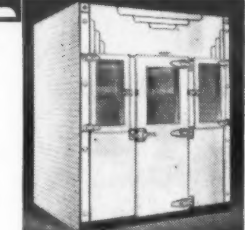


—with a background of forty years of progressive development in the design and manufacture of world-famous retail store equipment—Weber products include the most complete line of Refrigerated Display Cases and Boxes—that offer the greatest dealer possibilities.

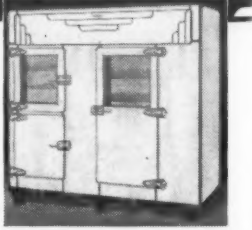
WEBER SHOWCASE & FIXTURE CO., INC.

5700 Avalon Blvd. LOS ANGELES

DISTRIBUTORS WANTED



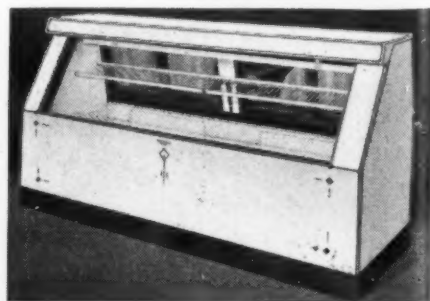
Percival equipment meets every requirement of the modern food store.



For mechanical refrigeration only.

Percival's complete line of display cases, reach-in refrigerators, walk-in coolers, chests, etc. will increase your sales of electrical refrigeration equipment and offer added earnings.

Desirable territories still available. Write for complete information.



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KELVINATOR TO MERGE WITH NASH MOTORS

G-E Is Reported Planning Shifts In Sales Policy

Revision May Be Made On Prices, Products And Markups

CLEVELAND—Announcement of sweeping changes in General Electric Co.'s sales and merchandising policies will accompany the company's showing of its 1937 line of electric refrigerators to distributors, department store men, and utility executives at conferences during November and early December, it was learned last week.

Key to these changes is revealed in a letter recently sent by the company to several large retail outlets. The letter, in part, reads as follows: "In department store clinics of the past, the members have always encouraged General Electric Co. to do the following things: 1. Have prices on the nose with major competitors. 2. Offer more complete line of standard and specially priced merchandise. 3. Increase mark-ups to where they are equal to or better than the best offer by any major competitor."

"General Electric Co. is ready to announce, on Dec. 1, that it will do all these things, and more."

Distributor previews, the fifth annual merchandising clinic for department store managers, and the tenth annual load-building conference with utility executives have all been moved up this year, to make way for the announcement of G-E's 1937 refrigeration units.

Refrigeration Units By Kelvinator Total 316,629 for Year

DETROIT—Shipments of Kelvinator refrigeration products for the fiscal year ended Sept. 30 totaled 316,629 units, compared with 240,340 units during the same period of last year, an increase of 31.7%, H. W. Burritt, vice president in charge of sales, announced last week.

Kelvinator oil burner shipments during the fiscal year increased 202% over those for the year previous, it was announced by E. V. Walsh, manager of the company's automatic heating division.

At the same time R. I. Petrie, sales manager of Leonard Refrigerator Co., announced that unit shipments of refrigerators for the fiscal year were 44% above those for the previous year.

Toledo Dealer Finds Air Conditioning Easier to Sell than Commercial Units; Specialty Selling Methods Employed

TOLEDO—Bob Winters, head of R. H. Winters Electric Co. here, says that air-conditioning installations are easier to sell than commercial refrigeration systems. And he should know, for he came into air conditioning by way of domestic and commercial refrigeration.

Winters now has 43 unit air conditioners installed in Toledo homes and offices. All of them have been put into use through application of the same specialty selling principles employed in the merchandising of domestic and commercial equipment.

"I'd rather sell air conditioning than commercial refrigeration, any time," Mr. Winters says. "It's easier, I think."

"In selling commercial equipment you have to hold temperatures within a range of 2 or 3 degrees. That means that the job has to be engineered within pretty rigid limits. And the minute his case or cooler shows a higher temperature than he thinks it should, the grocer or butcher is going to have your service man down there to see what's wrong."

"With air conditioning, though, it's

Electric Leagues to Discuss Kitchen Modernization

CLEVELAND—First annual meeting of the International Association of Electrical Leagues will be held in the auditorium of Electrical League of Cleveland on Nov. 20 and 21, according to an announcement by J. E. North of the Electrical League, president of the organization.

The first day's sessions, which will be open to the public, will be featured by discussion of both local and national phases of electric kitchen modernizing and electrical housewares merchandising.

George E. Whitwell, vice president of Philadelphia Electric Co. and chairman of National Kitchen Modernizing Bureau, will discuss the national aspect of the modernizing program. Local phases of the movement will be discussed by J. J. Caddigan, Boston; George R. Conover, Philadelphia; and J. S. Bartlett, Washington, D. C.

National phases of electrical housewares merchandising will be presented by H. P. J. Steinmetz, general sales manager of Public Service Electric & Gas Co., and chairman of the Electrical Housewares Program. Local discussions of the problem will be presented by S. S. Vineberg, Buffalo, Mr. North, and E. P. Zachman, Cincinnati.

Both local and national phases of the Better Light-Better Sight program (Concluded on Page 2, Column 3)

Berkeley Made Leonard Merchandising Head

DETROIT—Appointment of E. R. Berkeley as manager of Leonard Refrigerator Co.'s merchandising division was announced last week by R. I. Petrie, Leonard's general sales manager.

Mr. Berkeley has had a wide background of experience in the specialty merchandising field. For five years, he was manager of refrigerator, washer, oil burner, range, vacuum cleaner, and radio sales for the Hecht Co. department store in Washington, D. C.

For 15 years he was engaged in the merchandising of musical instruments and electrical appliances for various companies in the eastern part of the country. Just prior to joining Leonard, he was southern territory manager for the Premier Division of Electric Vacuum Cleaner Corp.

In his new position, Mr. Berkeley succeeds J. J. O'Neil, who has been transferred to Kelvinator Corp. Mr. O'Neil's position with Kelvinator is expected to be announced shortly.

different—that is, with unit air conditioners. You've got a range of 10 degrees or so in which to operate without discomfort in the home or office in which the equipment is used. As long as the humidity is controlled, variation of a few degrees won't make any difference in comfort, during the summer months."

Winters Electric Co. is well known in the electrical wiring and contracting business in Toledo, having engaged in that field for several years before getting into the appliance merchandising business. The firm entered this last field in 1928, when wiring business began to fall off.

Winters still does house wiring and contracting work, although electrical appliance merchandising now accounts for by far the largest part of the company's annual business.

One of the Winters company's most talked-about installations is in the reception room of Owens-Illinois Glass Co.'s offices here. In this room, 35x24x12 ft., with glass block walls and a ceiling insulated with glass (Concluded on Page 2, Column 4)

F.T.C. Upholds Class Discounts Under New Law

Robinson-Patman Act Case Seems to Bar Wholesaler From Selling at Retail

WASHINGTON, D. C.—In its first complaint under the Robinson-Patman Act the Federal Trade Commission last week appears to have upheld functional discounts as they are generally understood in industry trade relations, and laid down a definition of what constitutes a "wholesaler."

The complaint charged the United States Quarry Tile Co. of Canton, Ohio, with discrimination in selling to jobbers who also deal with consumers, at a lower price than to contractors.

In making its charge the commission says:

"The United States Quarry Tile Co. manufactures and distributes its products in many states and in adopting the practice of giving so-called (Concluded on Page 2, Column 5)

Twenty-Hour Blaze Damages Norge's Cabinet Plant

MUSKEGON HEIGHTS, Oct. 27—Fire which broke out shortly after 3 o'clock Monday afternoon in the part of the Norge Corp. refrigerator cabinet plant here which houses the woodworking division was finally extinguished at noon today after doing considerable damage.

Fire departments of three cities—Muskegon Heights, Muskegon, and Grand Haven—fought the blaze, while special apparatus was rushed from Detroit by airplane early Tuesday morning to assist them.

According to Assistant Chief E. J. Pitcher of the Muskegon Heights fire department no estimate of the damage had been made by Tuesday night, but he stated that the main floor of the woodworking division would have to be rebuilt and the machinery in that section of the plant repaired before plant operations could be resumed. Only raw materials damaged were those which were in process of being finished in the woodworking (Concluded on Page 2, Column 3)

F.T.C. Again Insists on Proper Use of Term 'Air Conditioning'

WASHINGTON, D. C.—The Federal Trade Commission, in its stipulation for the agreement reached in the matter of the Corozone Air Conditioning Corp., has reiterated its ruling that appliances which do not meet the FTC's definition of air conditioning cannot be advertised as such, and has set forth in greater detail its definition of what constitutes true air conditioning.

In Paragraph Two of its stipulation in the Corozone matter the Federal Trade Commission declares:

"The words 'Air Conditioning' signify the control by a mechanical device of the temperature, humidity, and circulation of the air in rooms, buildings, and railroad passenger trains; and the non-performance of any one or more of these functions takes a device out of the class of air conditioners, according to the understanding of the trade and the purchasing public."

Under the terms of the stipulation the Corozone Air Conditioning Corp., which manufactures air conditioners, humidifiers, and devices for purification of indoor air, agrees that it will not advertise or offer for sale any of its products as "air conditioners," or from representing in advertisements or otherwise that these devices will perform air conditioning, unless such apparatus actually belongs to the (Concluded on Page 2, Column 2)

Geo. Mason to be President, C. W. Nash, Board Chairman Of Nash-Kelvinator Corp.



GEORGE W. MASON who has "merged" his highly successful experiences in the refrigeration and automobile fields to become one of the country's foremost industrial executives.

Combined Assets Will Make \$50,000,000 Corporation

DETROIT, Mich., Oct. 27—A plan for the merger of Kelvinator Corp. and the Nash Motors Co. has been adopted by the Board of Directors of Kelvinator Corp., meeting in Detroit, and the Board of Directors of the Nash Motors Co., meeting in Chicago, and will be submitted to the shareholders of both companies as soon as the necessary legal papers can be prepared, it was announced today by George W. Mason, president and chairman of the board of Kelvinator Corp.

The plan provides that the name of the Nash Motors Co. shall be changed to Nash-Kelvinator Corp. Charles W. Nash will be chairman of the board of directors and Mr. Mason will become president of the Nash-Kelvinator Corp.

According to Mr. Mason's statement, terms of the proposed merger provide that the authorized capital stock of the Nash Motors Co. shall be increased in an amount sufficient to issue 1% shares for each share of stock of Kelvinator Corp. The number of shares of stock held by the stockholders of the Nash Motors Co. will remain unchanged.

The consolidation of Nash and Kelvinator would effect a \$50,000,000 merger, on the basis of recent valuations of assets of these two concerns.

Nash Motors Co. this year is celebrating its 20th anniversary in the automotive field. The company was started by Charles W. Nash in Kenosha, Wis., 20 years ago, and its plant is located there now.

Kelvinator Corp. is two years older, having been founded in 1914. However, practically all of the growth and expansion of the company's operations has come in the last 10 years.

Negotiations between the two companies for the consummation of the merger have been under way for two months, but the negotiations were kept secret until officials of both concerns met last week in Chicago for a conference, following which both Mr. Mason and Mr. Nash issued statements through the public press about the proposed merger.

It had been reported that if the merger went through the manufacturing operations of Nash Motors would be transferred from Kenosha to Detroit. Concerning this report Mr. Nash stated:

"We have no desire to see our (Concluded on Page 2, Column 1)

Weatherhead Doubles Building Area by Plant Purchase

CLEVELAND—Weatherhead Co., manufacturer of automobile and refrigeration parts, has purchased the former Hupmobile plant on East 131st St. near Taft Ave. here.

The plant group consists of two "monitor" type buildings, a four-story factory, and a five-story office building. Comprising approximately 500,000 sq. ft. of floor space, the plant will give Weatherhead more than double the area it has been occupying in six different buildings during the past few years, according to President Albert J. Weatherhead, Jr.

More than 1,200 men are employed by the company at present, Mr. Weatherhead said, in the manufacture of automobile and refrigerator parts of brass, steel, and aluminum.

New machinery is being installed in the plant, Mr. Weatherhead announced, and all manufacturing and office operations will be moved to the new location as rapidly as is possible without interference with production.

Beauty Shop and Gas Station Are Newest Settings for Sale of Appliances

AUGUSTA, Kan.—"Ugly ducklings" who enter the Swan Appliance store here, often come out with electric refrigeration on their minds, because Mrs. Lucille Swan, who has operated the store for the past year, has a beauty shop in the rear of her salesroom.

Efficient operators are hired by Mrs. Swan; this attracts a moneyed trade to her shop. Customers are then "exposed," coming and going, to the attractions of the appliance models. Approximately 50% of Mrs. Swan's appliance sales have been made to regular patrons of the beauty shop.

STAMFORD, Conn.—Gasoline and electric cooking appliances for table use may seem an odd combination, but George Bisacca mixes them successfully at his Mohawk "One Stop" Service station here.

Electric appliances are prominently displayed in a show case which forms the base of one of the gasoline pumps, and Mr. Bisacca usually manages to work a bit of appliance sales promotion into his conversation with customers. In addition he operates a small trailer, which carries appliance demonstrations virtually to the doors of local prospects.

A surprising amount of Mr. Bisacca's business is done with tourists and travelers who stop merely for gas, oil, or automobile accessories.

"Business is fine," exclaims Mr. Bisacca, "and growing every day. At first customers just couldn't get used to finding electrical appliances in a service station, but now they have become accustomed to it. Apparently electric housewares can be sold anywhere there is customer traffic."

**NEXT WEEK:
PRODUCT
DEVELOPMENT
NUMBER**

Mason's Early Experience in Automobile Industry; Came to Refrigeration in 1926

(Concluded from Page 1, Column 5) plants moved out of Wisconsin. Of course, if conditions in Wisconsin become such as to make it impossible to compete with conditions in Michigan that is another question, but this is a general comment and is not in the immediate picture."

Naming of Mr. Mason as president of Nash-Kelvinator Corp. in the proposed merger plan seems to substantiate a belief generally held in financial and industrial circles that one of the reasons for the merger was the desire to obtain Mr. Mason's executive ability for the Nash concern.

Mr. Nash, now in his seventy-third year, is no longer so active in direction of the affairs of the company and the presidency of Nash Motors has been vacant since the resignation of E. H. McCarthy. One rumor had it that Nash went to Walter P. Chrysler in his search for a top-flight executive and that Chrysler had recommended Mr. Mason. Another rumor was to the effect that banking interests had recommended Mr. Mason because of his splendid record in Kelvinator financial operations.

Mr. Mason, born 45 years ago in Valley City, N. D., is comparatively young as top industry executives go, but has held a number of important positions in both the automotive and refrigeration industries.

Following graduation from the University of Michigan in 1913 Mr. Mason joined the manufacturing division of Studebaker Corp., and remained with that organization until 1914, when he joined Dodge Brothers in a similar capacity.

For a brief period during the war Mr. Mason was on leave from Dodge

to take a hand in the operations of the Rock Island arsenal.

After the war, Mr. Mason was for a short time engaged in the banking business. William Robert Wilson, who had been in charge of manufacturing for Dodge Bros., had joined the Irving National Bank, and sent for him.

In 1921 Walter Chrysler had begun the reorganization of the old Maxwell Motor Car Co. Mr. Mason joined the organization as assistant to the vice president in charge of manufacturing; and the following year he became works manager at the Chrysler Corp., remaining in that capacity until 1926. In that year Mr. Mason was offered the presidency of Copeland Products, Inc., manufacturer of household electric refrigerators, and attracted to this new industrial field, he accepted the position.

Two years later he assumed the presidency and chairmanship of the board of Kelvinator Corp.

F. T. C. Reiterates Stand On 'Air Conditioning'

(Concluded from Page 1, Column 3) class of devices known to the trade and public as air conditioners.

More than a year and a half ago, in the matter of the Federal Trade Commission vs. Landon & Warner, the commission stated:

"Landon and Warner agree that in selling a humidifier they will not use in their advertising matter the words 'air conditioner.' The stipulation points out that the respondents' apparatus performs only one of the functions of an air conditioner, namely that of supplying humidity."

Origin of Norge Fire Not Determined

(Concluded from Page 1, Column 3) plant at the time the fire broke out. As described by Assistant Chief Pitcher the fire was not of a spectacular nature but because of its peculiar nature was a particularly stubborn blaze to fight.

The fire, of undetermined origin, broke out under the flooring of the first floor of the woodworking part of the plant, the flooring being about 2 feet off the ground. In the space between the flooring and the ground had accumulated sawdust and shavings, the residue of many years of plant operation.

In such material the fire spread quickly and was naturally very difficult to get at. It was necessary, Assistant Chief Pitcher declared, to chop away almost the entire floor in order to extinguish the fire completely.

Cleveland Meeting to Discuss Program

(Concluded from Page 1, Column 2) and of adequate wiring will also be discussed during the opening day's sessions.

Discussion of league programs and problems will take up all of the second day's sessions, to which league officials only will be admitted. Included in the program are discussions on "Meeting Gas Refrigerator Competition," by J. S. Bartlett, Washington, D. C.; "Air Conditioning Promotion," by E. Barnes, Cleveland; "Expanding the Commercial and Industrial Markets," by S. S. Vineberg, Buffalo; and "Plans for Financing Appliance Sales," by Ralph Neumuller, New York City and E. J. Kramer, Rochester, N. Y.

Merchandising Manager



E. R. Berkeley, new head of the merchandising division of Leonard Refrigerator Co.

Winters Sells 5 Units To Contractor for Home & Office

(Concluded from Page 1, Column 2) wool, the company has installed a 3-ton Frigidaire self-contained unit.

In summer, outside air is brought in and filtered through Owens-Illinois "Dust Stop" filters. On mild days when refrigeration is not required, fresh filtered outside air is brought in and handled automatically.

In winter use, outside air is heated, humidified, and circulated in the room. Both winter and summer operation of the unit is automatically controlled. Occupancy load of the room varies from three to 20 persons.

Another Winters self-contained job is installed in the announcers' and engineers' room of radio station WSPD, atop the Commodore Perry hotel.

As an example of the specialty selling type of business his company does, Mr. Winters cites the case of Art Langenderfer, well known Toledo contractor. During the city's intense heat wave last summer, Mr. Langenderfer decided to install a Frigidaire self-contained unit in his private office.

Impressed by the comfortable conditions made possible by the system, Mr. Langenderfer ordered a second unit installed in his mother's bedroom. Then, a little later, he ordered three more units, to be installed in his own home, to add to his own and his family's comfort after working hours.

Winters has conditioned two funeral chapels in Toledo—the Collingwood mortuary, with a system totaling 10 tons and including 14 self-contained units; and the West Toledo mortuary, where four units furnish 3 tons of refrigeration.

Other installations made by the company include the James Blair residence, where three 1-ton units are installed; The George Ford, Jr., and J. C. Coates homes, each using two 1-ton jobs; and the homes of J. E. Martin and P. R. Heyman, where 1-ton systems are in use.

In addition, Winters has 1-ton jobs in the offices of George Pleasby Co., Auto Plate Glass Co., and of H. D. Bennett, president of Toledo Scale Co.

Four Organizations Join Group Buying Battle

MILWAUKEE—Support of the Wisconsin Radio, Refrigeration and Appliance Association in its campaign to eliminate group buying by and for employees of Milwaukee industrial plants was pledged by four other trade organizations at the association's October meeting.

Geoffrey Willoughby, manager, represented the Better Business Bureau and the retail division of Milwaukee Association of Commerce; A. E. Wallace and Theodore Stickle, secretaries, represented the Fuel Dealers Association of Milwaukee and Retail Furniture Dealers Association; and W. O. Zervas the Electrical League of Milwaukee.

G-E Will Hold 3-Day Factory Meetings To Introduce Line

(Concluded from Page 1, Column 1) erator line on Dec. 1, it was learned.

The fall conference of distributors will be held in five groups at Nela Park this year, beginning Nov. 4 and ending Nov. 21. Instead of regional meetings in the field, as were held last year, distributor organizations will be brought to the factory in groups of from five to 12, to see the 1937 line and hear sales and advertising policies. Each group meeting will last for three days.

Dealer previews of the company's 1937 models will be held by distributors during the first week in December.

The tenth annual load-building conference for utility merchandising managers will be held at Nela Park on Nov. 30 and Dec. 1. First day of the two-day conference will be devoted to an open forum discussion of load-building problems, led by men with first-hand experience.

Second day will be devoted to a preview of G-E appliances and promotion for 1937.

Annual department store merchandising clinic, usually held shortly after the first of the year, will be held this year on Dec. 2 and 3, according to announcement by Ralph C. Cameron, assistant sales manager for the appliance and merchandise department, in charge of department store activities.

Selection of the earlier date followed its approval by a majority of department store managers contacted in a survey by General Electric. Initiation of the new merchandising program is thought to be the reason behind the moving up of the clinic.

Attendance at the department store clinic, which has been growing steadily during the past years, is likely to set a new high mark this year, Mr. Cameron says. List of speakers will include prominent retail executives and merchandisers, and display and advertising men.

Discounts Must Be On Service Basis Only, FTC Rules

(Concluded from Page 1, Column 3)

wholesalers a wholesale discount where the latter also sells to the consumer, the result has been, or may be substantially to lessen competition or to injure, destroy, or prevent competition in the sale and distribution of the tile. Particularly between the wholesalers and the tile contractors the effect has been, or may be, to tend to create a monopoly for the favored customer receiving discriminatory prices from the respondent in the distribution of the tile in the United States."

From implication it would seem that this FTC complaint makes fairly definite the following interpretation of the Robinson-Patman Act: functional discounts are approved, but only where the goods sold are passed from the wholesaler to the retailer and the wholesaler does not sell to the ultimate consumer; since the complaint in this case was issued against the manufacturer it seems that he is responsible for determining the ultimate destination of his goods.

Since the charge is made that jobbers sold by the tile company, "in many instances acted as retailers by selling to the ultimate consumer," and the tag "so-called wholesalers" is placed on those jobbers charged with also selling at retail, it would seem fairly clear that a "wholesaler" will be one who sells at wholesale only.

What the Federal Trade Commission complaint seems to bring out very clearly is that discounts must be on the basis of services performed, rather than on an arbitrary classification which the manufacturer might lay down. What the FTC apparently means is that wholesalers dealing exclusively with retailers can receive the customary functional discount under the act, but if they sell in competition with the retailer the act is violated.

Makers of quality household appliances—electric refrigerators, washers, ironers, and air conditioners—specify Delco Motors as standard equipment because Delco Motors conform to their own high standards of manufacture. Dealers prefer to sell Delco-powered appliances because Delco Motors insure dependable service and satisfied customers. Buyers choose Delco-equipped products because they have learned that the name "Delco" means quiet operation, economy of upkeep and long life. Delco Motors are a profitable investment for manufacturer, dealer and buyer alike.

DELCO PRODUCTS CORPORATION
DAYTON, OHIO

In Canada: McKinnon Industries, Ltd., St. Catharines, Ont.

Delco MOTORS

WOLVERINE COPPER TUBING

The famous Wolverine Solder Seal keeps the interior as clean as the day it was made. In addition, each coil is wrapped in heavy crepe paper to insure cleanliness and labeled to facilitate handling. Meets all requirements for manufacturer and for service work.

WOLVERINE TUBE CO.
1411 CENTRAL AVENUE
DETROIT, MICHIGAN

Schools Profitable If Dealer Follows Up, Erwin Asserts

URBANNA, Va.—"Cooking schools are profitable," claims E. C. Erwin, of Virginia East Coast Utilities, Inc.—"if the dealer follows them up properly."

Mr. Erwin's statements are borne out by the cooking school held last spring in Urbanna. Although the utility serves only about 350 domestic customers in this community, 115 women attended the school.

This year's class was the third annual one, and upon registering, women were asked whether or not they had purchased any electrical appliances since the last class was conducted. Of the 85 women who had attended the previous school, 59 answered in the affirmative.

The company estimates that the annual increase on this amount of business will amount to 71,736 kwh. or approximately \$2,800 in revenue.

Seventy prospects for various electrical appliances were uncovered through this year's class. Ten of these were prospects for ranges, nine for refrigerators, two for range and refrigerator, nine for washers, one for an ironer, and the rest for smaller appliances.

Schapiro Opens Norge Shop in Baltimore

BALTIMORE — William Schapiro, for the past two years manager of refrigeration and appliance sales for Hecht Bros. Co. department store, has resigned to open a Norge electric and appliance dealership of his own, under the name of The Appliance Center.

Mr. Schapiro's experience in refrigeration covers a period of 12 years, 10 of which were spent with the Baltimore branch of Frigidaire Sales Corp.

Paul Kemper, who has been associated with Hecht Bros.' stores for the past two years, was named manager of the refrigeration and appliance department to succeed Mr. Schapiro.

8-Week Drive Brings Sales of 1,327 Units

GULFPORT, Miss.—Cooperation of nine full-time salesmen with 41 selling local managers of Mississippi Power Co. during a recent eight-week sales drive resulted in the sale of electric refrigerators to 4.94% of the utility's domestic customers. Sales during the drive totaled 1,327 units.

Leading local managers who won high percentages in their communities are: J. Higginbotham, of Pascagoula, 420%; H. E. Davis, Wiggins, 462%; A. H. Gregory, New Augusta, 1067%; and R. H. Ramsey, Purvis, 1067%.

Highest full-time salesman was J. A. Dean, Meridian division, whose 120 sales were 480% of the quota assigned to him.

Frigidaire Dealers Plan Winter Campaigns

HARRISBURG, Pa.—Plans for fall and winter sales campaigns were discussed by the Frigidaire dealers and salesmen of central Pennsylvania who met here recently.

The meeting was conducted by L. H. Woodland, district representative of J. J. Pocock, distributor. Frigidaire Corp. was represented by J. V. Donahue, Jr., educational department; C. A. Allen, household zone manager; and Walter Gunburg, district zone manager. H. J. Heeler, Pocock's assistant sales manager, also was present.

Refrigerator Keeps Melon Cool Through Big Fire

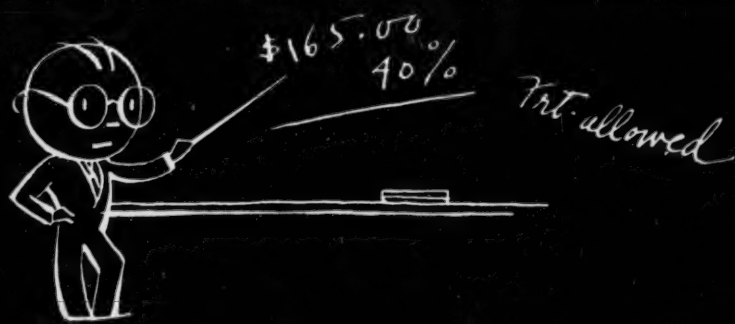
TULARE, Calif.—An electric refrigerator, caught in the recent \$100,000 fire which destroyed half a block of this town's business section, not only weathered the conflagration, but when opened two days after, contained a melon which was still cold.

When the blaze broke out, the refrigerator was on display in the window of Harry Crowe's store.

Although the exterior of the box was scorched and the wires burned, no other damage was sustained.

Yanss Heads Bridgeport Brass' Detroit District

DETROIT—George W. Yanss, formerly sales engineer of the Bridgeport Brass Co., has been appointed district manager for the company's Detroit territory. He is now located at the direct factory offices, 2426 Buhl Building.



A simple lesson in arithmetic



Some salesmen can sell only if they have a lower price. This is not really selling, it is only order taking. For there are always people to be found who are ready to buy and who are ready to place an order at the lowest price.

Modern methods of distribution are so set up that a selling price is established by adding cost of production, cost of distribution and profits. Some alert manufacturers reduce production costs by legitimate production short-cuts. Sometimes selling costs can be shaved by legitimate merchandising savings. But when profits are reduced they are merely sacrificed.



When a dealer cuts prices on refrigerators he does so in the belief that selling will be easier. But this is merely a delusion. For price cutting is merely an invitation to competitors to cut prices. Then a lower price does not make selling easier, for competition has a lower price, too. Thus price cutting is nothing more than profit sacrificing. It gets "nobody nowheres."

This ought to be plain and simple. If you understand it, you will also understand the advantage of selling value rather than

price. And the dealer who is fortunate enough to be handling a refrigerator with Dry-Zero Insulation will be able to use this as a selling point to completely offset the cut price argument of a competitor whose refrigerator does not have Dry-Zero Insulation.

Dry-Zero Insulation in a refrigerator will save 20c to \$2.00 per month in cost of operation for the whole life of the refrigerator. This is because Dry-Zero Insulation is the most efficient available and maintains this efficiency indefinitely. It is unique in this respect because unaffected by the moisture that inevitably penetrates into the wall of any refrigerator in use.

If you do not have this complete story, write for copies of the interesting folder, "How Dry-Zero Insulation in your refrigerator saves you money every month in cost of operation."

Dry-Zero Corporation, 222 North Bank Drive, Chicago, or 687 Broadview Ave., Toronto, Ontario.



DRY-ZERO
INSULATION
The Most Efficient
Commercial Insulant Known

Around the World

With George F. Taubeneck

With this instalment the editor concludes a detailed survey of the refrigeration market in France, and its tangled situation involving controversies between French representatives of American manufacturers, French manufacturers, and the French government.

Next week Editor Taubeneck will relate some of his personal experiences in Paris and Monte Carlo.

This is the 44th consecutive issue in which reports have appeared of the editor's 36,000-mile journey around the world in search of information about foreign markets for refrigeration, air conditioning, and home appliances.

Potentialities of the French Market

Potentialities of the French refrigeration market are considered very promising by those in the country who have made a close study of the situation. These observers believe that, despite the rather notorious sales resistance factor, the French market could easily absorb 50,000 refrigerators annually.

France, these observers say, is slowly entering upon an era when the home of a new type, with new comforts and "necessary luxuries," will be accepted generally.

Pioneer promotion work by its electric industry, and by the advocates of new materials and new methods, it is believed, will then bear real fruit.

Not Enough Space For Wine Bottle Storage

EDGAR CARMEL, manager of Frigidaire, Ltd., 46 Rue la Boetie, Paris, says that the greatest hold-back to American household refrigerators in the French market is the fact that there is not enough space between the shelves to permit storage of the high bottles in which French wines are corked.

The coils ordinarily used in American-made refrigerators, Mr. Carmel also says, are not very well adapted to local French requirements. They need to be spaced differently.

Frigidaire's Paris organization is a Canadian company, although it is backed by American capital. It operates as a factory branch, and sells Frigidaire's at retail in Paris only. In

the provincial centers, the company acts as distributor, working through 52 exclusive dealerships.

Salesmen, says Mr. Carmel, are recruited mainly by advertisements in newspapers. There is a high turnover in the large cities, but the men stay with their selling jobs a lot more steadily in the provincial towns.

But, wherever they may be picked up, the men are all green, and require several weeks of intensive sales training before they can be trusted to take to the trail with any degree of selling success.

Mr. Carmel, to meet this deficiency in sales material, runs regular training schools for new men. American sales manuals, translated into French, are used in the schools. In Paris, Mr. Carmel supervises the school personally. In the provinces, dealers' schools are operated by traveling instructors, working out of the Frigidaire Paris headquarters.

The company's advertising program is divided between newspapers, trade magazines, motion pictures, exhibits at French fairs, and direct mail. Of all these, Mr. Carmel says the last has proved the most effective. He credits this with bringing in the "most of the best," as far as prospective buyers are concerned.

Fully 55% of the company's business is of the credit variety, Mr. Carmel says. The company uses the GMAC plan in financing time payment sales.

On credit sales, the company demands a down payment of 25% on commercial equipment, and from 10 to 15% on household equipment. Maximum length of time permitted on household sales is 18 months.

France's future is bright, as far as refrigeration is concerned, in Mr. Carmel's opinion. The factors which he thinks will govern the future development of the French domestic market are:

1. A more thorough education of the public to refrigeration's benefits.
2. Better prices on refrigeration equipment.
3. Closer adaption of American-made equipment to prevailing French local conditions.

French Sales Engineer Learns, Then Teaches

L. L. MERTENS, Frigidaire's chief engineer in the Paris branch, sees eye to eye with Mr. Carmel on the matter of shelf arrangement to take care of tall wine bottles, as well as on the need of different coil spacing in household units.

A reader of the News for several years, Mr. Mertens would welcome more technical news, and liked the paper especially in the days when a special engineering section was published.

Work in the sales engineering department, over which Mr. Mertens has supervision, consists mostly, he says, in "learning" and "teaching."

After obtaining the factory literature from headquarters in America, the company engineers first digest it, master it themselves, and then translate it into workable material for use in the field.

Once the material is put out in the field, the department must next watch its use. As Mr. Mertens puts it: "We must see that it is read, understood, and used."

The sales engineering department of Frigidaire, Ltd., Mr. Mertens explained, is divided into four sections. First of these is concerned with construction work, the second with proposals, the third with sales training, and the fourth with the inspection of installations, to see that they are operating satisfactorily.

The sales training under Mr. Mertens, which beginning salesmen must all undergo, covers both technical and sales work and lasts for two weeks. After the fledgling salesman gets into actual production, weekly meetings keep him abreast of what's what in the industry.

For those who are extra ambitious, brush-up courses are conducted; for those who may be slipping, there are regular courses for improving sales technique.

RENE DUMING is sales manager of Frigidaire's retail operations in Paris.

Crosley Can't Import Fast Enough, Claims Sopher

Managing director of Shelvador, which, as you have probably already guessed, is the French agent for products of Crosley Radio Corp., is S. SOPHER, Parisian theater and night club tycoon, who helped us see the bright lights. The company is well established financially, with a capital of about 650,000 francs.

P. DUMONT is sales manager of the company, which sells both household refrigerators and air-conditioning equipment.

Mr. Sopher is among the representatives of American manufacturers

Favorite Pastime



Frenchmen are never too busy to argue about politics. Here are two Parisians, stopping on a busy corner to engage in the country's most popular outdoor sport.

most troubled by the quota decree, and nobody will be happier than he if and when it's eventually lifted.

Under present restrictions, the company is allowed to import 115 tons of equipment, by metric weight. Mr. Sopher says, however, that the company could sell twice that amount, without half trying, if he could get the equipment.

He would like to see few mechanical changes in American machines brought in for sale to the French market. Hermetic units, to his way of thinking, should be included on all machines shipped to the country.

Crosley is the third largest importer of American-made machines in France, Mr. Sopher says. He estimates the first nine companies as being Frigidaire, Frigeco (General Electric), Crosley, Kelvinator, Westinghouse, Norge, Gibson, Sparton, and Fairbanks-Morse.

Distributing through about 20 dealerships, scattered all over France, the company operates its own retail outlet in Paris, just as does Frigidaire.

And, just as with Frigidaire—or, for that matter, just as in the United States—good salesmen are mighty hard to find, and hard to hold once you get one.

The old saying is that "everything comes to him who waits," but Mr. Sopher finds this isn't true, with good salesmen. You have to go out after them. And he does, mostly through newspaper advertisements.

But, even as the Good Book says about the poor, Mr. Sopher finds that the poor salesmen are always with him. Drifters, he finds, usually come in without invitation—and do they stop drifting, once they find what they consider a soft berth!

"You have one hell of a time giving them the sack," Mr. Sopher says.

Good men, however, are worth training hard, Mr. Sopher finds. He holds school for newcomers for an hour every morning. When they get on their own feet, the men are paid a salary and commission—mostly commission.

Main advertising mediums employed by the company are newspapers, direct mail, and sizeable exhibits at the many fairs held annually throughout France. This last type of advertising, Mr. Sopher has found, is particularly advantageous to his company.

About 78% of the company's sales are for cash, the rest on six months' time payment terms, with the notes discounted at the banks, and payable at the cashier's cage instead of at the dealership.

The future of refrigeration in France? It's great, Mr. Sopher says—if the quota system somehow disappears, and prices are lowered to permit sales at a more reasonable figure. Otherwise, he's not so sure about it.

That Bottle Storage Complaint Again

Mr. Dumont, sales manager of the Crosley Paris agency, thinks American manufacturers might profitably take into consideration the customs of the countries in which they hope to do business.

Translated into terms of the French market, this means that refrigerators exported from the United States ought to have more room for tall bottle storage. This seems to be a dominant French complaint against American machines.

For instance, the real Frenchmen likes to be able to put a few bottles of champagne or Alsace wines in his refrigerator—on the right side. If the

cabinet is not adaptable to this old French custom, the salesman who's handling the line runs into a sales barrier that is not always so easy to surmount.

Mr. Dumont has given the future of the refrigeration market in his country considerable thought, particularly as regards foreign firms and the sale of American-made machines. His conclusion is that the French companies—or American companies who are able to establish manufacturing operations in the country—will eventually have things pretty much their own way, unless the quota system is changed.

This latter happening, of course, is what he'd like most to see. Unless something of that sort does occur, though, he's pretty much sold on the opinion that the potentially fine French refrigeration business of the future will be dominated by firms who manufacture their units within the country and get away from imports, duties, quotas, and all the other attendant bothers with which importers are currently and constantly beset.

Kelvinator Manager Sees Great Future Market

Markt & Co. handles Kelvinator equipment in Paris and throughout France. RAOUL BASTIEN is managing director of the company, at its Paris headquarters.

Handling domestic, commercial, and industrial refrigeration equipment (Kelvinator domestic equipment, York commercial, and Temprite beverage and ice cream equipment) Markt is no small organization. The company has offices in New York City, Paris, London, Hamburg, and other European centers.

"American manufacturers of refrigeration parts should not attempt to sell to everybody in France," Mr. Bastien says. "They should sell only to responsible concerns."

"The market, though progressing, is still at the beginning of its real development, and such development can only be taken care of by responsible companies—those who are spending money in promotion work, advertising, and who pay representative salaries. These firms must rely, for success, upon the effective support of interested American manufacturers."

"In 1934, for instance, only 10,000 domestic refrigerators were sold in France. The market was not able to absorb any more, because the demand for refrigeration has not been developed to any considerable extent."

Markt & Co. is wholesale distributor of hardware specialties, and has close to 8,000 retailers as customers throughout France. Besides, the company has some 150 provincial retailers for domestic refrigerators, and about 30 retailers for its commercial equipment.

This organization, says Mr. Bastien, covers practically the whole of the French market.

Kelvinator and Frigidaire, being the first American refrigerators offered the French public, hold an advantage over other manufacturers in this respect, Mr. Bastien believes.

"We have full confidence in the prospective development of the French market," he declared. "We are working in friendly cooperation with our competitors, and only wish that our cooperation is not crossed by irregular imports of refrigeration equipment from America."

Salesmen employed by the company are paid salary and commission. Most of them, says Mr. Bastien, have been with Markt & Co. for a number of years. Service men, who are paid straight salaries, are required to keep in step with developments through a training course each year.

The company's advertising efforts are spread between large exhibits at fairs, newspaper splashes, and direct mail campaigns.

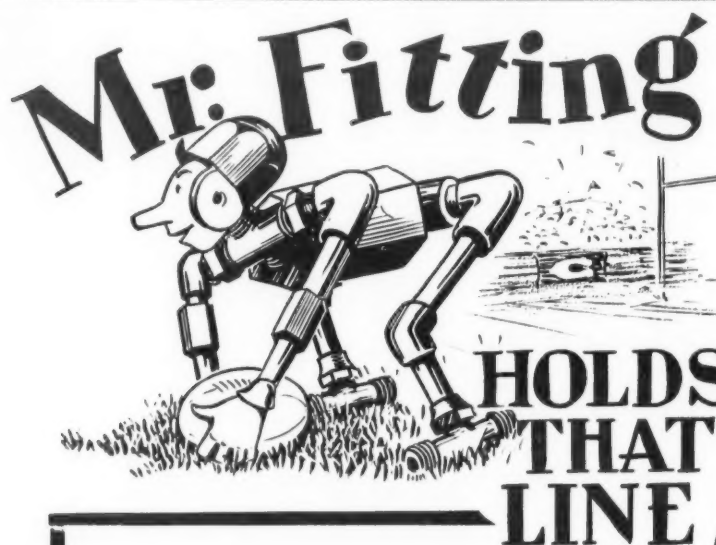
One of the principal reasons why the French domestic market has been slow in developing, Mr. Bastien declares, is that practically every French country house has a good cellar, in which, the French believe, food may be kept in good condition.

Rapid spread of electric service in the past few years, however, is a factor most favorable to increase in the use of refrigerators and other domestic electrical appliances, he believes.

Export Price Concessions Fair, Says de Castro

La Representation Generale is sole distributor, in Paris and the Seine region, for all products of General Electric Co. The company also distributes Easy Washers, Devoe & Reynolds paints, and Fairbanks-Morse radios in France and colonies. RALPH E. DE CASTRO is owner and director of the organization.

Most of the company's advertising program is concentrated on French fairs, although a considerable amount (Concluded on Page 5, Column 1)



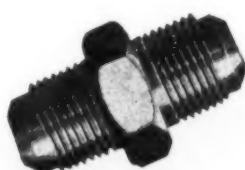
Right now both alumni and undergraduates are concerned with the ability of certain players to hold the line for dear old Siwash . . . Whether they hold it or not will probably not matter very much after December, as it really proves very little that some athletes can "take it" while others weaken in the combat.

A different story is that of Mr. Fitting whose linchpin talents are required today, tomorrow and for years past. Without the help of Mr. Fitting to keep refrigerant lines in check there would be no refrigeration industry.

Mr. Fitting of Commonwealth can "take it". He gets lots of abuse, can resist the power play of alternate compression and decompression and may be depended upon at all times to "hold that line".

Ever since automatic refrigeration commenced to be a part of our lives, Commonwealth Brass Corporation has supplied fittings "Built Right to Stay Tight" to leaders of the industry. Commonwealth fittings are seepage and leakproof and because of their record of service are the preferred choice today.

Every standard style of Refrigeration Fitting supplied from immense stocks. Quick shipments of semi-standards and specials. Consult Commonwealth on your next order.



COMMONWEALTH BRASS CORPORATION
Commonwealth and G. T. R. R. DETROIT

(Concluded from Page 4, Column 5)
is spent in newspaper advertising and direct mailings to prospective buyers.

Sales possibilities in the French home market, Mr. de Castro believes, hinge on one all-important thing—price. If prices of American-made units for sale in France can be reduced, he thinks the industry can really go places in that country.

Today, an American refrigerator of about 4 cu. ft. capacity sells for approximately 4,200 francs—about \$280 in American money. Naturally frugal, the average French homeowner won't touch one with a 10-foot pole at that price.

It will pay American manufacturers to realize, Mr. de Castro says, that, since service costs to the factory are eliminated in sales made to foreign countries, special price concessions may easily be made on exported machines. This should apply to complete units, as well as to replacement parts.

Shipping and duty charges must be paid by the local distributor, Mr. de Castro reminds, so that a lowering of wholesale costs would not make it any harder for the manufacturer—but, at the same time, would ease conditions considerably for the French importer.

La Representation Generale's sales are handled both directly and through dealers. The company itself employs 14 retail salesmen, and good men are hard to find.

Eight out of every 10 applicants, Mr. de Castro says, are floaters, who go from one house to another. Generally these men will start with either Frigidaire or General Electric, and, failing to make good there, will go on down the line, stopping at each dealership a short while before being pushed out of the selling picture altogether.

Mr. de Castro handles training of new men personally, both individually and by group classes. Salesmen are paid on a commission basis, with extra premiums for the sale of certain models and a bonus if sales go over the regularly established quota.

Sales are divided about 50-50 between cash and terms, Mr. de Castro says. All time payment sales are financed by investment companies, and, by a special exclusive arrangement with power companies, G-E is able to offer its buyers up to four years to pay on a "rental-sale" basis.

As an example of what a really top-flight salesman can do in the French market, Mr. de Castro cites the case of a Mr. Stirby, one of the men in his organization. This man has for several years averaged more than \$60,000 per year in sales to individuals.

If this sort of selling isn't a world record, Mr. de Castro is willing to bet that it's at least a new high mark for France.

Frigeco Distributes G-E Products

HARRY A. GRANARY, managing director of Frigeco, S. A., whose Paris office we made our headquarters (and about whom we wrote a couple of weeks back), and RONALD WOODROFFE SUTTON, refrigeration engineer with International General Electric, both are close students of the News, and get a lot of their sales ideas from it.

Mr. Granary is still interested in following the course of the retail refrigeration field in France, although IGE has been out of that side of the picture for some time.

Frigeco, trade name of General Electric refrigerators in France, sells through dealers exclusively, with about 180 firms throughout the country acting as its representatives.

General Electric, Ltd., the British manufacturing firm, has prior rights to the use of that name in Europe, so the very fortunate combination of letters FR-I-G-E-CO (French International General Electric Co.) was adopted.

The company handles General Electric refrigerators and all other appliances, with the exception of ranges, radios, and a few small items.

Westinghouse Values News' Service Data

Westinghouse distributor in France for domestic refrigeration equipment is JEAN LAVAL. E. E. DYBWAD represents Westinghouse Electric International in Paris, headquarters of the organization being in Lourdes.

Mr. Laval, a News reader for six years, also handles Universal Cooler commercial refrigeration.

Service information in the NEWS, and particularly the MASTER SERVICE MANUAL, are among the features he values most highly. French service men have a real need for the information contained in the Service Manual, he thinks—and the only setback to its popularity in the country is the fact that service men can't read it, because it isn't printed in the mother tongue.

Familiar Sights Along the Streets of Paris



1 and 2. Public bookstalls along the banks of the Seine. While the French are not a people who read as they run, the purchase of books, both old and new, is made most convenient. 3. Along this tree-studded avenue, Parisians sit and read as they wait for the buses.

Mr. Laval is of the belief that a French translation of the Manual would have a real market.

Quota System Hits Norge Organization Hard

M. COLIN is managing director and M. LAURENT chief engineer of the Norge distributing organization in France, headquarters of which is in Paris. In addition to household and commercial units, the company also handles washing machines.

Quotas, duties, and prices are the bane of Mr. Laurent's life at the present time. His company is one which got a bad break when quotas were established on 1934 import figures. The quota established for Norge, in Mr. Laurent's opinion, is woefully insufficient to cover potential sales—and its supervision on a quarterly, instead of an annual, basis has been another deterring factor.

If he could obtain the equipment, Mr. Laurent believes at least twice as many Norges could be sold in France each year than are sold there at present. High duties on refrigerators do nothing to make the frugal French homeowner look more kindly upon American-made products, either, he says.

Two changes in American machines would also ease their acceptance in the French market, Mr. Laurent told us. In the first place, shelves should be constructed so as to allow for storage of tall bottles of wine or champagne; and secondly, motors should be supplied for both 110 and 220-volt current.

The company sells direct to consumers in the Paris territory. In French provinces and colonies, sales are through regularly established dealerships. In an effort to strengthen dealer representation, the firm now has a man constantly in the field, looking for likely "agents" in towns throughout the country.

Advertising and promotion by the company covers advertising in newspapers and trade periodicals, catalogs, and exhibits at most of the French fairs every year. As an added sales punch this year, the company has an entrant in the bicycle race around France. This man, well up among the leaders, has kept the Norge name before the public as well as any other promotion method used this year, Mr. Laurent believes.

Preponderance of the firm's yearly refrigeration business is done on a credit basis. Fully 70% of last year's sales, Mr. Laurent says, were closed on terms of from 60 to 90 days. Sales for cash totaled 20%, and about 10% were on terms of a year.

Development of the French market in the future, Mr. Laurent believes, is very much dependent upon the lowering of tariff duties, so that American refrigerators may compete more evenly with those of French manufacture. At the present time, he feels, the price (with imposts and duties added) is too high for volume sales.

Taxi Drivers Keep Life Interesting in Paris

Paris is a city of distinct types—a city strangely cosmopolitan and varied, yet strongly individual in character. Many diverse specimens of humanity roam the glorious boulevards of this beautiful city; yet all possess the distinct markings and protective colorings of the Parisian.

The first type with which the writer became acquainted was, of course, the modern taxi-man; he of the cynical and witty nature and the peculiar desire to take the long way 'round.

Unless you travel with the equipment of a Hollywood star, your taxi driver will see to it that everything gets upon one machine—two trunks on the roof, another chained to his own quarterdeck, an astonishing number of bags and packages inside, and the rest stowed around his feet. Every piece means a supplementary franc in the legal charge and he lets no franc get away from him without an orgy of vocal and manual protest.

Then he shoots his loaded machine, and you in it, squarely into an un-

broken torrent of traffic. He forces a way through it, rounds a corner on two wheels and misses a collision with another swift vehicle by three inches. By this time you are fully convinced that this madman will never land you at your hotel alive.

He does, though—he always does; and sits as slouchy and bored as ever, though ready to change his look of gloominess for one of injury if you dare hand him as a tip anything less than five times as much as he would get from a native Parisian. No matter how much you tip him, it's not enough.

Ride as often as you will behind this individual, the Parisian taxi driver, you will never be able to grow

entirely calm under his pilotage. He keeps life interesting for you, and is a great hastener of approaching baldness.

Most of us have to think first and then act—the Parisian taxi man sees and acts simultaneously and does not think at all. Unscrupulous, unwashed, and uncannily skillful, he is one of the most Parisian features of Paris.

The old "cocher" who used to drive the four-wheelers, and those interesting little victorias, is by no means extinct. One still sees him in his tall glazed hat, and with his horse, jogging along the boulevards and the Avenue Champs Elysees.

We soon found that if we were

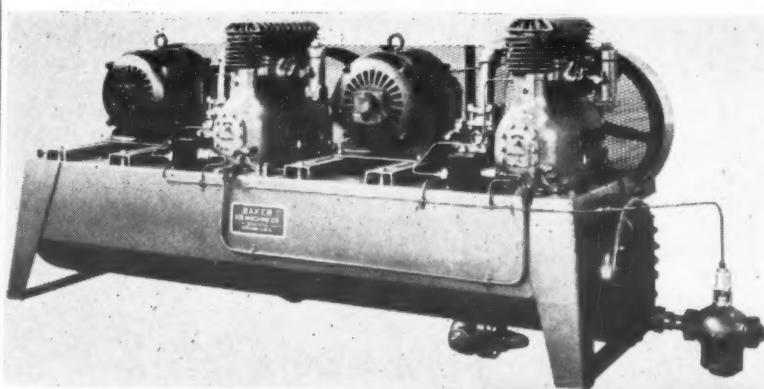
going to do any sight-seeing we'd have to grab an old cocher and his shabby fiacre and "take it sweet and slow." These cochers have an unrivalled knowledge of Paris byways and the older parts of the city, and are mighty fine guides.

The newspaper "kiosks"—little, round, summer-house-looking places, with their sides plastered with advertisements and their windows filled with bright-covered books and illustrated papers—are a feature of the streets of Paris.

As a general rule, the lady who serves one at the kiosk will be found to be the most obliging and honest of the street traders of Paris.

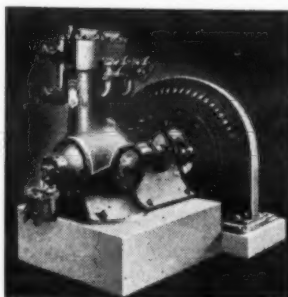
(To Be Continued Next Week)

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in the BAKER LINE-UP

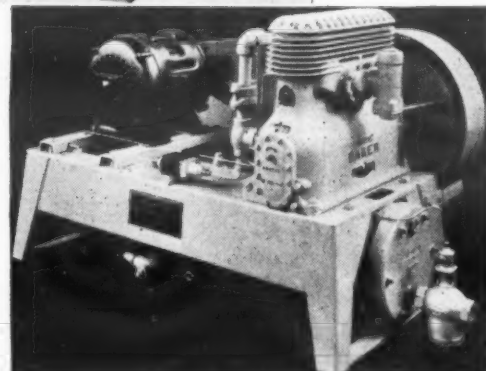


Baker dual four cylinder type water cooled Freon or methyl chloride unit with automatic capacity control. Available in a wide range of capacities.

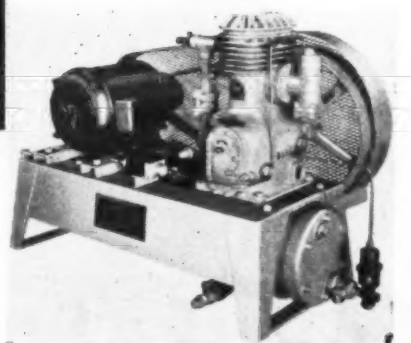
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Eastern Sales: New York City
Central Sales: Chicago

AUTHORITY ON MECHANICAL COOLING FOR OVER 30 YEARS

How Robinson-Patman Law May Affect Industry's Practices As Viewed by Dun & Bradstreet

Editor's Note: This is the second and concluding instalment of excerpts from "Check List of Possible Effects of the Robinson-Patman Act," written by Willard L. Thorp, director of economic research for Dun & Bradstreet, Inc., and Edwin B. George, associate economist for the same organization.

First instalment of this analysis of how trade practices and manufacturer-distributor relations may be affected was published in the Oct. 21 issue of AIR CONDITIONING AND REFRIGERATION NEWS.

This instalment discusses chiefly the way in which the Robinson-Patman anti price discrimination law may affect functional discounts.

Terms of Sale

"18. *Terms of Sale.* Doubt prevails as to whether or not the law touches terms of sale. They were included in so many words in one of the earlier drafts of the bill so that the elimination of all reference to them adds weight to the contentions of those who say they are not now involved.

"Discriminatory cash discounts may be construed as a part of price or as an indirect evasion of the law. If unusually high, even if uniformly offered, they may be subject to attack as not being available for the reason that some small purchasers might not be regularly able to pay cash.

"It would seem that the factor of uniformity in such matters as cash discount, will be given more importance than height, to the extent that either is significant.

Unearned Discounts

"19. *Unearned Discounts.* Many sellers are interested in the possibility that if buyers take unearned discounts they may be making themselves guilty of knowingly inducing an unlawful discrimination in price. The taking of unearned cash discounts is one of the more obvious examples. The seller might also be guilty if he permitted such discounts, depending upon the extent to which his intent is or is not taken into consideration.

Price Changes

"28. *Price Changes.* Several consequences may flow from the fact that the law concerns itself with the relationship among the several prices at which a commodity may sell rather than with the average level.

"There may be a tendency to reduce the number of changes in discounts, once they are carefully established, and to place the main burden of adjustment to market conditions on the list price.

"It is said to be more probable that purchasers wishing to resell with a conspicuous low-price policy will search for products whose character will permit the greatest concessions for quantity under the law.

Regional Price Spreads

"30. *Regional Price Spreads.* Section 3 repeats the Clayton Act prohibition of local price-cutting for the purpose of destroying a competitor or eliminating competition. However, the question remains under Section 1 as

to whether, if different market areas can be shown to be quite separate without any over-lapping competition, differential prices for them could be defended."

Other Segregated Markets

31. *Other Segregated Markets.* There is a body of opinion that differentials escape the jurisdiction of the law when among noncompeting customers, as for example, those who purchase for manufacture and those who purchase for retail sale to consumers; although within each such market, prices must stay within the restrictions of the law.

"Government agencies would thus usually not be in competition with private customers and would thus constitute a separate class, according to this view.

"On the other hand, some read a much wider application into the law than was indicated in Congressional discussion,—that the moment a commodity is offered at more than one price, even to different classes such as wholesalers and retailers, or to different areas, price discrimination enters and each transaction must be judged as to its effect on competition and competitors at any and every point up and down the flow of that commodity from manufacturer to consumers; this even though they handle only the products of other manufacturers.

"An interesting problem arises in connection with export trade. Section 1 clearly exempts it by limiting the application to "use, consumption or resale within the United States." Section 3 contains no such clear-cut exemption, though it may be that exporters will not be regarded as in competition with domestic purchasers and thus no subject to the market controls of this Section. At any rate, sellers may wish, for their own peace of mind, to take extra precaution that goods sold at low prices for export are actually exported.

Private Brands

"33. *Prices and Private Brand Competition.* One of the problems raised by the law is that confronting the manufacturer of both owned and private brands in the same grade and quality, who sells his own brand at a higher price and on the other lines must meet the prices of competitors engaged exclusively in the production of private brands. Differences in the cost of marketing the two lines will usually take up some of the slack but in many cases far from all of it.

"Quite a number of lawyers are advising clients to discontinue private brand production under such circumstances, but for many manufacturers whose plants and staffs are geared to the double market this will be extremely difficult.

"Attempts may conceivably be made to defend such practices on the ground of the right to meet competition, even though the conflict of such a plea with other and very explicit portions of the law seems quite direct.

Indirect Discriminations

"34. *Indirect Price Discriminations.* The list of ways in which valuable

favours can be given to selected customers is of course, very long. Advance notice of impending price changes for example may be quite as useful as an extra discount.

"A good price may be quoted inconspicuously to the general trade, but all the real solicitation and special contacting concentrated on a select list.

"Preferred deliveries are not now unusual. The problem of secret or private compensations may be aggravated and correspondingly hard to police. "Trade-ins" promise to be particularly troublesome in lines such as machinery.

"On the other hand, most constructions of the law point out that many of the various subterfuges heretofore used to continue low prices to protected customers after higher prices have gone generally into effect, will come into direct collision with law.

Price Publicity

"35. *Price Publicity.* Indications are that because of this law manufacturers will incline toward giving greater publicity to their prices. This may take the form of either individual action or centralized industry-wide filing of either past or current prices. The choice between past or current price will partly depend on the several industries' views of the Supreme Court's attitude toward current reporting.

"Perhaps the leading factor in encouraging price publicity will be the desire for defense against false charges and misrepresentation of prices actually effective.

Protections

"36. *Buyers' and Sellers' Protection.* Some anxious buyers may require sellers to guarantee that prices to them do not involve an illegal price discrimination.

"Incidentally, some manufacturers are likewise insuring themselves by stating on their invoices that jobbers' prices are given on the condition that the goods in question are not directly resold at retail.

Allowances and Services

"37. *The 'Proportional' Question.* Before any of the speculative developments in this section can run their course, vigorous legal warfare will probably be waged over the extent to which cooperative advertising must actually be curtailed under this law.

"The law says that allowances for the purpose must be proportional to all competing customers. Much depends upon Court construction of the word "proportional" and on the standards by which the Courts permit it to be measured.

"Some industries will argue for 'real value to the seller,' i.e., the sales return to him which can be attributed to the allowance or service, as the proper measuring stick; others will reject it as incapable of measuring anything but rival imaginations.

"Other sellers are seeking a more exact measure. A few attorneys have recommended putting cooperative advertising to all customers on an equal basis such as 50% to be paid by the customer and 50% by the manufacturers.

"A more general suggestion is that advertising favors be distributed in proportion to the size of orders, which in fact approaches the conception of proper treatment set forth in Congressional Reports.

Limitations on Allowances

"39. *Limitations on the Use of Allowances.* There will be some tendency to withdraw advertising allowances from all rather than bear the expense of extending them proportionately (irrespective of relative pulling power) or be persecuted by incessant petty complaints, or even both.

"Many manufacturers have already taken such action, although its purpose is merely strategic with some of them, designed to clear the slate until a better controlled program can be devised.

"In other cases, the points of application may be limited. One prominent manufacturing industry is studying the proposition that there are only two constructive and auditable practices, tying in with each other.

"(1) newspaper or other printed advertising, confined to media supported by a guaranteed circulation, and

"(2) extension of advertising allowances to stores carrying adequate stock, providing window displays during a week of sale, and guaranteeing distribution of specified quantities of merchandise.

"As far as special discounts are concerned, the fact that the buyer has extra costs is no justification for a concession by the seller, unless it results in some saving to the seller. It may be necessary to limit the distribution of new products to the groups who are expected to promote it or make a lower price to all customers, rather than place it in many outlets on different bases.

"41. *Cancellation of Allowance Clauses.* Some lawyers contend, others deny, that cancellation of advertising allowances by manufacturers because of this Act is warrant for distributors to cancel the merchandise contracts to which such allowances were tied.

Effects on Advertising

"42. *Effects on Advertising.* Even though cooperative advertising is reduced in volume, it does not necessarily follow that the total amount of advertising done will be reduced.

"Undoubtedly, distributors will make some increase in their own advertising appropriations. However, it is probable that the net volume of distributors' advertising will be reduced because of curtailment of manufacturers' subsidies for that purpose. Some newspaper space has indeed already been cancelled by a few prominent distributors, but so far as it has gone and as in the case of some of the manufacturers' more drastic steps already described, this must be considered a phase of early maneuvering and not a forecast of long term policies. And of course, distributors are not reticent regarding the possibility of much more active promotion of their own brands.

"On the other hand, manufacturers may increase their direct sales efforts, although it is not impossible that some of the released funds will find their way into reduced prices.

"However, the most natural presumption is that they will go into increased national advertising, particularly such part of them as is released from forced "cooperative" campaigns.

"Some aver that advertising is now going to be bought more generally on its merits rather than to be used as a form of price concession. Others warn that critical manufacturers have seriously underestimated the value of point of sale merchandising, and that the loss of flexibility and deft last minute pressure under this law is going to hurt those having to give it up.

Indirect Sales Promotion

"45. *'Indirect' Sales Promotion.* If it is not constructed as indirect discrimination to give special allowances or sales promotional inducements to selected customers' customers to whom no direct sales had been made, the practice could obviously develop.

"Efforts of manufacturers to stimulate sales by giving bonuses to distributors' salesmen are in the same class.

"There is considerable legal opinion that the first practice might be permitted under the law, and an unusual degree of agreement that the second would be subject to its prohibitions.

Service Details

46. *Allowance and Service Details.* Manufacturers giving unequal financial aid to certain of their distributors, in cash, push money, bonuses or prizes, may be obliged to either scale down such aids, convert them into decreased prices, or extend equivalent accommodation to other customers.

"Discrimination in services can include many details such as special processes of finishing accessories, packaging, labeling, loaned personnel, factory salesmen, detailing, engineering assistance, specialized forms of delivery, warehousing and similar physical facilities and services.

Cost Accounting and Cost Allocation

"51. *More Elaborate Accounting.* Where differentials are used, accounting methods will have to be thorough-

ly overhauled in order to permit much more precise cost calculations on individual products, quantities, customers, territories, services, sales and profit returns from particular sales and advertising programs, etc.

"According to the methods and standards adopted by the Commission and the Courts, profit and loss statements may have to be made computable in terms of numerous divisions and sub-divisions of the total business.

Need for Principles

"52. *Need for Principles.* Methods of treating costs constitute one of the most important new areas of administrative discretion under this law. Observers agree that there is little precedent now available for the solution of difficult problems. Both manufacturers and distributors will have to be alert for signs from the Federal Trade Commission, presumably through early cases, as to the principles which it will evolve.

Cost Disclosure

54. *Cost Disclosure.* A feared by-product of the "burden of proof" provision is that manufacturers who discriminate, even if legitimately, may have to be alert for signs from the Federal Trade Commission their costs of production at the will of any jealous competitor or suspicious customer who can drum up a prima-facie case. Some may keep differentials far within permitted bounds through fear of this kind of exposure.

Slack Season Orders

"55. *Slack-Season Orders.* If large slack-season orders are to carry special discounts, production costing will have to take more careful account of whether they are actually processed in off seasons and can be legitimately accredited with lowered costs such as eliminating overtime, earning off-season prices for raw materials, etc.

"Many production schedules will have to be re-arranged to insure that large orders given special discounts because of their "supplementary" or fill-in nature, are actually fabricated in slack seasons.

Channels of Distribution

"56. *Functional Discounts — The Issue.* The law says nothing about functional differentials. Does this silence mean that they are not permitted or that the law does not intend to interfere with them? Lawyers have gone strongly on the record at both extremes, as well as intermediate positions.

"This problem of interpretation stands in the way of even speculative opinion as to the possible effect of this law on customer classifications and existing channels of distribution.

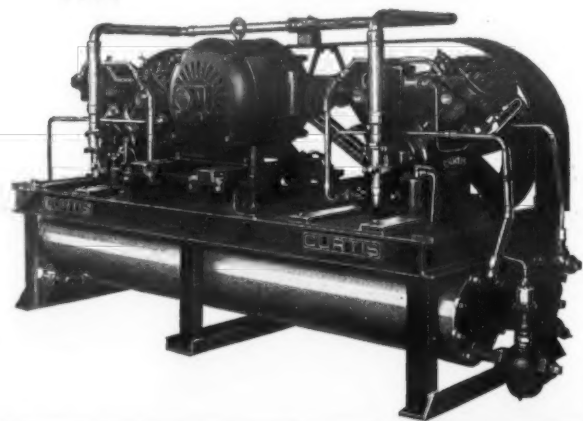
"Some lawyers hold that the law is clear in describing the only types of discount which are permitted, namely those based on quantity and method, and that any functional discount which does not meet these criteria, is unlawful.

"They support this view by reminding opponents that one of the earlier drafts of the new law made express provision for permitting

(Concluded on Page 7, Column 1)

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Features of Robinson-Patman Bill Most Vital to Industry Trade Relations

(Concluded from Page 6, Column 5)
function differentials, but the reference was later deleted.

"Others argue that the law contemplates fair treatment of competitors, but that those performing different functions are not competitors. They say that the Courts could never permit so sweeping an assault on long-established and traditional practices, not directly subject to attack in the discussions prior to enactment and now dragged in by clever analysts as an unexpected by-product of a loosely written law.

"They question whether the absence of explicit recognition by Congress indicates a desire to eliminate functional discounts (except as they appear indirectly through quantity or method) rather than the assumption that they needed no direct safeguarding. They point out that the old Clayton Act made no exception of functional discounts in its price discrimination section, and yet no one ever successfully challenged their essential validity and they are still with us.

"The third and fourth groups, like the second, expect functional discounts to continue, but differ both as to method of justification and plans for future use.

"As may be implied from the last paragraph, the second group thinks of them as discretionary areas which the law does not limit as long as the lines between functions are kept clear. The third and fourth groups regard them as means of keeping the different functional groups on an even competitive level.

"The difference between the third and fourth is that the former says they may be so used and the latter that they must be so used.

"The third group, therefore, regarding as the crucial point in the law the permission of any discrimination which cannot be shown to injure the least favored group, points out that functional discounts may be permitted up to the point of such injury.

"Consequently, if functional discounts fail to hurt and actively help to equalize competition on the next distributive level, they are permissible. By this reasoning special concessions could be given to wholesalers if thereby the latter's retail customers would be helped to meet the competition of mass distributors.

"The fourth group maintains that such concessions not only could but must be given to wholesalers. Failure to give them might result in injury to the latter's retail customers, and the law says that competition must not be injured with the seller, his customer, or customers of either of them.

Functional Discounts

"57. *If Functional Discounts Are Prohibited.* If functional discounts *per se* should not be permitted, alterations in many price structures will be revolutionary.

"The multitude of special discounts for various customer classifications would have to be reviewed, and only those could survive which could meet the new tests. Relative costs, resulting from quantity or method, would tend to take the place of relative services and pressures in determining the new price relationships.

"59. *If Functional Discounts are Limited.* The third position involves the proposition that discounts in favor of wholesalers as against chains may be permissible under the law, even while the contrary would be forbidden; this for the reason that the wholesaler's mark-up added to the manufacturer's price to him will bring the retailer's price up to that at which the chains buy, with the result that the competition between them would not be injured.

"This would, of course, depend upon the assumption that the wholesaler and the chain are not in competition. It really involves the recognition of certain reasonable functional discounts, which do not result in the type of injury contemplated by the law.

"60. *If Functional Discounts Are Required.* If the responsibility is placed upon the seller to avert injury to competitors at his level or below, other difficulties appear. These same problems are present, even if functional discounts are made merely permissive up to the point of injury. The law gives little aid as to their solution.

"As an illustration, suppose a manufacturer sells to a chain and a wholesaler. The wholesale mark-up is, of course, beyond his control. The problem arises as to whether the inability of the independent retailer who buys from the wholesaler to compete with the chain (an injury) is due to an inadequate price differential by the manufacturer to the wholesaler, or too large a mark-up by the wholesaler.

"It is obvious that the illustration involves difficult administrative problems, whose solution could be arrived at only by such arbitrary expedients as accepting trade custom as a criterion of proper differentials, or by endeavoring to establish "reasonable" allowances for performing various functions on the basis of broad industry studies.

Customer Classifications

"61. *Simpler Customer Classifications.* As a general proposition, whether or not functional discounts are allowed or required, there is virtual agreement that there will be a pronounced reduction in the number of customer classifications used by individual manufacturers.

"To the extent that special customer classifications were created for the purpose of making price concessions to certain customers, they can survive only to the degree that they can be justified by demonstrable cost differences.

"Furthermore, manufacturers who have sold primarily to one class of buyer and only desultorily to others, may decide that discretion calls for abandoning any minor group whose business can be obtained only by a price differential.

"And small manufacturers and distributors, feeling themselves unable to afford sufficiently elaborate costing systems, or the expense of a defense before the Federal Trade Commission may in fact eliminate either discounts or certain customers legally retainable under the Act.

Knowledge About Customers

63. *Knowledge About Customers.* It is expected by many that, in order to establish proper price structures, manufacturers and distributors will need to improve greatly their knowledge of the kind and amount of competition prevailing among their various customers, including customers of various types such as wholesalers, jobbers, converters, assembling houses, and retailers.

"Normally a phase of market analysis where performed at all, the sharpened insight into market conditions conferred by this requirement, may have the effect of stimulating market analysis in the broader sense as an official company policy.

Vertical Integration

"64. *Vertical Integration.* It is widely predicted that mass distributors will go into manufacturing to some indeterminate, although probably no great extent.

"Opinions naturally differ on this point. The same thing can be accomplished without the same finality, by contracting for the entire output of smaller manufacturing concerns. Such a disposition on their part would likewise relieve the supplying manufacturers of any risk under the law.

"A still further type of arrangement which some believe would isolate the transaction from the law's immediate jurisdiction, is the conversion contract, under which the distributor provides the raw materials and hires the manufacturer to process them for him. Thus the manufacturer sells only service, not commodities.

Loss Leaders

"66. *Loss Leaders.* To the extent that loss leader practices have been made possible by extraordinary price concessions, they may be discouraged. The consequences of this are difficult to predict.

"In some cases, where wholesalers have been giving a close price to retailers to enable them to meet loss leader competition, they may take the opportunity to shorten their retail discounts. This may provoke manufacturers into seeking other methods of maintaining maximum pressure at point of sale, as for instance, by direct selling to retailers.

"In order to continue the practice of conspicuous low-price selling, some outlets may transfer their emphasis to products whose character will

permit large quantity discounts not previously sought or granted, or may even contract for entire outputs which they wish thus to feature.

Consignments

"68. *Consignments.* In some manufacturing quarters, attention is being given to the possibility of obtaining greater freedom of action under the law by consigning to wholesalers, reimbursing them on a commission basis, and either making one price to retailers or devising a graduated quantity schedule for them.

"In such cases, it is assumed that wholesalers' commissions would have to conform to the intentions of the law. It may also be assumed from previous court decisions that the mere designation of a distributor as an agent will not provide escape from responsibility under the law; the agency must be legitimate.

Association Activity

"71. *Trade Association Activity.* The leadership which trade associations have taken in considering the Act, is regarded by many as forecasting a marked increase in their activity in connection with its many projected developments.

"Not only are they serving at the moment as a clearing house for opinions and experience, but in the long run may serve most usefully in developing conditions which will contribute to effective operation—uniform cost accounting, market analysis not only in the broad sense but in the narrower problems of trading areas and competitive relationships, product standardization, price publicity and the like. They may promote clarification through Trade Practice Conferences and the development of test cases.

The Administrative Range

Equally important with these re-

actions to the substantive provisions of the law are the more general attitudes and expectations of business with respect to the administration of law.

"It is true that a tremendous amount depends upon the administration. In a derived sense it is as important as the law itself. The business man has to rely, not only upon his own common sense as is so often and truly said but also upon that of the Federal Trade Commission and the Courts.

"After all, to start at a basic point, decisions must be made as to whether competition either generally or with some specific person was injured. Does loss of a sale comprise such injury? Or does the injured party have to relay his story through a Bankruptcy Court before it is to be taken seriously? Furthermore, even the best of Congressmen could not write a law which would deal explicitly with all the minutiae of Twentieth Century business intercourse, and even a shift of the burden of proof onto a respondent cannot altogether foreclose the possibility of his being innocent.

"The experience with railroad regulation suggests that the development of satisfactory cost computations may be a long and weary road. Here again, much depends upon the attitude of the administrative agency.

"However, the impact of the law is far more than a matter of Commission and Court action. One of the most common bits of legal advice seen and heard is that sellers, regardless of legal uncertainties, should immediately do away with any discrimination which common sense tells them can be injurious.

"Were it declared unconstitutional tomorrow, its influence would still be felt. Many enterprises have already introduced changes into their practices which they would endeavor to maintain even without legal support.

Levitt Heads Appliance Sales for Peoples Co.

BALTIMORE—Oscar Levitt, previously manager of the Baltimore operations of Shapiro Distributors, Inc., former Grunow distributor here, has been appointed sales manager of the refrigeration, radio, and appliance division of Peoples Electrical Supply, Inc. He succeeds Malcom B. Stewart.

Louis Schwartz, who has been connected with the George's refrigeration sales organization in Washington, D. C., also has been appointed to the People's sales firm, as has Gordon Bozman.

5,000 Attend 3-Day Asheville Exposition

ASHEVILLE, N. C.—Crowds estimated at 5,000 attended the three-day radio and home appliance exposition sponsored here recently by local electrical appliance dealers.

Exhibitors at the show included Freck Furniture & Radio Supply Co.; Asheville Gas Co.; Carolina Power & Light Co.; All Electric Co.; Gibbs Radio Co.; Dunham's Music House; Sterchi Brothers; A. K. Sutton, Inc.; Southern Bearings & Parts Co., and Lockwood Co.

Merchandise Mart's Show To Be Held Jan. 4-16

CHICAGO—Second annual International Housewares and Major Appliance Show, sponsored by the Merchandise Mart, will be held during the January home furnishings markets, Jan. 4 to 16, it was announced last week by N. Stewart, market promotion manager.



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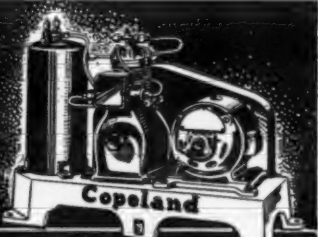
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Models Before Christmas

DESPITE the fact that manufacturers of household electric refrigerators have never announced their new lines until the spring of each year heretofore, there is considerable ground for believing that most of the major manufacturers will have their 1937 models ready for showing in dealer windows before Christmas.

This is an innovation in production and merchandising which will undoubtedly be welcomed by dealers and distributors the country over. In the last two or three years, particularly, dealers have been crying that they couldn't get deliveries of refrigerators at the time when they needed them. Because new lines weren't brought out until February or March, shipments could never keep pace with sales during the frantic months of April, May, and June.

Orders Can Be Filled

With the announcement of 1937 products in November and December, however, every dealer should be able to have an adequate stock on hand at the beginning of the selling season; and manufacturers, having long since finished the always big task of supplying all dealers with display models, should be in a position to fill orders as fast as they come into headquarters.

This is but one of the practical reasons for announcing new lines at the end of the old year. Another potent one is the fact that early announcement and display gives both manufacturer and dealer an opportunity to field-test the features of a new line.

Sometimes a new gadget or development, while intrinsically valuable, does not happen to strike the fancy of the fickle public. In previous years, the manufacturer and dealer was simply "stuck" for the season with that unpopular feature. This year, however, dealers will have an opportunity to find out just what features do and do not seem to interest prospective purchasers. Those which have little or no appeal can then be eliminated before the active selling season gets into full swing, and those which do catch the public fancy can be emphasized in the sales presentation, and "played up" in advertising and promotion.

Keeping a sales staff occupied during the fall and winter months has always been one of the most bothersome problems of the dis-

tributor and dealer. No matter what schemes of artificial stimulation were devised and executed—"spring dating" plans, price reductions, contests for salesmen, contests for consumers, special sales presentations for cold weather—the late fall and winter months have continued to be low points on the annual sales curve.

With new models available during these lean periods, however, it may be that selling household refrigerators will not be so violently seasonal a business. Such a result would be hailed as a protector of profits, manpower, and morale by every element of the industry.

A considerable portion of the prospects are sufficiently motivated by impulses akin to pride of possession that the arrival of something new is an inducement to buy, so as to be among the first to claim ownership. This group of purchasers can be accommodated at a period when sales are normally at very low ebb.

Last year the automotive industry, which had traditionally announced its new models in January, brought out its new streamlined beauties in September, October, and November—with not a few misgivings.

To the great relief and gratification of all concerned, the public welcomed the advanced date of the New York automobile show (where new cars traditionally make their debut), and demonstrated its approval with a highly satisfactory volume of orders. The entire motor car industry benefited from the straightened-out sales and production curves which followed. Perhaps this example will be found an inspiration, and be emulated, by the household refrigerator industry.

Barometer for Spring Sales

From the standpoint of the manufacturer, the introduction of new models in the late autumn should provide a barometer with which to gauge potential sales in the spring.

Thus, instead of relying entirely on expensive surveys, upon estimates (invariably too conservative) of future business by dealers, and on guesses by sales executives (often optimistic) to provide a means of basing orders for raw materials and production tools, management will be able to see straws in the air pointing the direction the consumer wind is blowing.

Still another consideration which may sway manufacturers toward an early introduction of new lines this year is the possibility of widespread, crippling strikes in basic industries next spring. Many competent observers believe that if Roosevelt is re-elected, a staggering array of strikes will be instituted shortly thereafter.

Should these two events come to pass, the industry might be seriously handicapped in its efforts to obtain parts and materials at the time when it most needs them. Early production schedules should forestall the occurrence of such a disaster.

Announcement of 1937 models in November and December should have a dramatic effect upon Christmas business. All too often, heretofore, prospects contacted for Christmas gift business have said: "Yes, I'd like to buy a refrigerator for the family for Christmas, but this is practically an old model you're offering me. I'll wait a month or two until your new line is on display."

Now, however, dealers can start off their promotion on these new lines with a bang, and wage a strong drive to make a 1937 household refrigerator the national Christmas gift this season.

Letters

Webb Wants to Know the 'Why' of Trade-in Policies

Strawbridge & Clothier
Philadelphia, Pa.

Editor:

Your editorial in the issue of Sept. 30 deserves careful reading by the N.E.M.A. and by everyone selling electric refrigerators for the home. Especially is this true when it now seems likely that 20% of the business to be gotten during 1937 will be replacement business.

Department stores throughout the nation will positively be driven to branded refrigerators unless the N.E.M.A., or a group of the better known manufacturers, decides what policy to follow and then sees to it that every distributor, dealer, utility, and department store toes the mark in sticking to that policy.

I can't believe that the leading manufacturers in the industry want to lose their department store accounts—or have those accounts push branded refrigerators. But to date very little seems to have been done by the manufacturers toward solving the trade-in problem to the department stores' satisfaction.

Because this is a perplexing problem—and one of interest to so many readers of your paper—I have a suggestion to offer. I suggest you immediately start a series of articles on the reasons why the following industries formed trade-in policies peculiar to each and differing from each other:

1. Radio.
2. Automobile.
3. Washing machine.
4. Vacuum cleaner.

MAURICE WEBB.

Opportunity for Salesmen To Develop New Field

Modern Equipment Corporation
Defiance, Ohio.

Oct. 23, 1936

Dear Sir:

We are wondering whether you might have any compilation in your files of manufacturers agents throughout the United States who are selling Refrigeration Equipment and supplies.

In the Automotive Equipment Industry, there are several thousand manufacturers agents in the United States calling on the Jobbers and a number of manufacturers, including ourselves, use this type of man as our direct factory sales representative.

We do not know whether there is a parallel in the Refrigeration Industry but we are looking to the distribution of our new line of commercial refrigeration equipment and, therefore, the question.

We believe that representatives handling high unit value items such as commercial coils would be better adapted to the distribution of condensing unit equipment than the man carrying a large number of coil items such as copper tubing, flare connections, controls, expansion valves, etc.

If you have any thoughts on the matter, we will appreciate it greatly if you write us.

M. H. PENDERGAST,
General Manager

Answer: We have had several similar inquiries recently. It appears that there is a very definite opportunity for a few salesmen to develop a new field of activity. At present there are only two or three "manufacturers' agents" known to us who are specializing in refrigeration and air conditioning products and who have developed a clientele of refrigeration supply jobbers in a specified territory.

If there are companies or individuals who are prepared to offer this service to manufacturers, we would suggest that they make themselves known through the advertising columns of this paper.

We'd Like to Hear from Westinghouse about This

Spoor & Ahbe Film Corp.
4911 Broadway, Chicago, Ill.

Oct. 26, 1936.

Gentlemen:

We have been engaged by the Westinghouse Electric & Mfg. Co. to make a series of slide films for their refrigeration division. The Westinghouse company is desirous of incorporating in several of these films an article from the Sept. 2 issue of ELECTRIC REFRIGERATION NEWS.

After a thorough search of the Chicago district, I find that this publication is available only through the Business News Publishing Co.

I trust that this particular issue is available and will appreciate your forwarding it to me. C. W. ELLIOTT.

Answer: The Westinghouse people complained bitterly about the article published in the Sept. 2 issue. Therefore we cannot understand why they would want to use it in advertising.

Who Is Going After The Trailer Market?

1516 Chestnut St.
Philadelphia, Pa.

Editor:

I would appreciate it if you can tell me whether or not there is a refrigerator that uses no ice, electricity, gas, or chemical manufactured in this country; one that is "cooled solely by water."

The reason I am asking the above is that I understand that one is made in England and fully patented.

I also would like to know what refrigerator companies are going out for the house trailer business.

The writer has been in the commercial field for the past nine years and expects to go into business for himself. R. L. CAMERON.

New Zealand Jobbers

Refrigeration Supplies, Limited
Head Office: National Bank Chambers,
49-51 Courtenay Place, Wellington C.3.,
New Zealand
Auckland: New Zealand Express Bldg.,
Fort Street, Auckland, C.1.
Sept. 14, 1936.

Dear Sirs:

In our letter of even date, to which we attached our first subscription list and remittance, we advised that we would tell you something about ourselves, in case you should receive enquiry from companies seeking agents or representatives in this country.

Our company has been formed only very recently, for the specific purpose of indenting and carrying stocks of refrigeration components. To date we are the only jobbers in this field, all the other concerns interesting themselves in refrigeration in New Zealand being either distributors or dealers, or else service men or engineers. To date, manufacture or assembly of refrigerators is hardly on a commercial basis in this country, but it is to be expected that before very long, there will be quite a market for this class of trade.

Our policy is to sell to distributors, dealers, service men, manufacturers, and assemblers, and for this reason, we do not propose to handle any proprietary line of complete refrigerating equipment or refrigerators, nor to carry out any service or installation, as we must avoid competing with all the classes of trade with which we are dealing.

The principals of the company know the refrigeration business thoroughly, and prior to its formation, had already been in contact with, and selling to, all classes of refrigeration houses in this country.

R. W. MCKENZIE.

Desires Information About Service Manual

General Refrigeration Service
Jobbers and Dealers in Refrigeration
Supplies

29th Ave. and 10th St.
Meridian, Miss.

Oct. 21, 1936.

Gentlemen:

Attached is our check for the amount of \$5.00 in payment of the enclosed invoice. Please put our name on a mailing list for catalogs and other information on refrigeration. We are interested in both commercial and domestic equipment.

We also notice mention in your magazine of your MASTER SERVICE MANUAL. We would like to have information and price on this Service Manual. M. W. HAMILTON.

Answer: The 440-page MASTER SERVICE MANUAL gives the "What to do" and "How to do it" for all fundamental types of household refrigeration systems. The MANUAL not only tells how various service operations should be done, but shows how they should be done with the 257 pictures, drawings, and diagrams that illustrate the book.

Author K. M. Newcum has had a wide range of practical experience in active service work. He has taught classes in refrigeration servicing at trade schools and has developed from this experience a direct and understandable approach to service problems.

Mr. Newcum discusses the operation of each individual part of the refrigeration system, and then in presenting the "how to service" information he analyzes the possible service complaints and then describes the proper remedy. Going further, he gives the step-by-step process of making repairs.

In addition to instructions for servicing the various types of refrigeration systems used in refrigerators now on the market, the MANUAL also includes special instructions for 15 makes which are no longer manufactured.

A Very Fine Contribution To the Industry

Montgomery Ward
Chicago

Oct. 8, 1936

Mr. Cockrell:

We are constantly looking for just such information as you have compiled in the REFRIGERATION AND AIR CON-

DITIONING SPECIFICATION BOOK, and I consider it a very fine contribution to the industry. K. B. CHAM,
Major Appliance Service Division

Needs a Directory of Washing Machine Parts

Refrigeration Supply Co.
275 Boas St., Harrisburg, Pa.

Sept. 16, 1936.

Gentlemen:

We are interested in knowing if you publish a directory covering washing machines, washing machine parts, etc. and if so what the cost of such a directory is. If you do not publish such a directory, will you be kind enough to advise us who does. R. D. JONES.

Difference Between Electrolux & Superfex?

Laurinburg, N. C.

Gentlemen:

Please send me a copy of your paper. Also send me information showing difference between Electrolux and Superfex refrigerators.

ROBERT A. MONROE.

Answer: Complete information on the Electrolux refrigerator operation was published in the March 29, 1933, issue of REFRIGERATION NEWS. We have not published any information on the operation of the Superfex refrigerator.

A Note to Factory Service Dept. Mgrs.

Servicio General de Refrigeracion
Expertos en Refrigeracion
Electrica Automatica

San Jose No. 97, Habana, Cuba.
Oct. 19, 1936.

Dear Sirs:

We beg to acknowledge receipt to your interesting letter of the 9th instant and wish to thank you for it.

Complying with your request and in order to be able to have in our possession the latest data regarding our specialty, please find enclosed herewith Postal Money Order for \$3.00, so that you may mail us by return a copy of the 1936 REFRIGERATION AND AIR CONDITIONING SPECIFICATIONS BOOK. We have already in our hands the MASTER SERVICE MANUAL which you mentioned in your letter but due to our position on the refrigeration trade in this market where we are the leading and only organized company, suppliers for the independent service men of the whole island, we are continuously in need of data, literature, etc. covering our trade.

Due to this fact, we are badly in need of having on hand the master part and price catalog covering, Frigidaire, Kelvinator, Servel, and Copeland products, so that we may be able to properly identify the parts for the condensing unit by their own numbers.

Any data, information, literature, etc. that you may deem advisable and proper for the organization of our works, please be good enough to let us have it, which will be highly appreciated by us. A. ALVAREZ,
Manager.

Note to Service Dept. Managers of Frigidaire, Kelvinator, Servel, and Copeland: Will you furnish the parts catalogs requested?

Interested in Information On Air Conditioning

Fairbanks, Morse & Co.
1000 St. Charles Ave.
New Orleans, La.

Oct. 20, 1936.

Gentlemen:

Please place our name on the mailing list for engineering information on air conditioning. We wish to compliment you on the splendid paper you are publishing. It is full of information along the engineering lines. P. M. BENTON.

Wants Ice Cream Cabinets And Water Coolers

The Clement Davis Co.
Electrical and Mechanical Engineers
Bustleton and Lansing Avenues
Frankford, Philadelphia, Pa.

Gentlemen:

Kindly put our name on your mailing list as one who would want to receive literature of refrigeration equipment.

At present we are interested in ice cream cabinets for store use and water coolers and a refrigerator cabinet of approximately 3 or 4 cubic ft. equipped with a water cooler coil for bottled water or city supply.

All cabinets for use with methyl chloride, less compressors. CLEMENT DAVIS.

Like Thousands of Others

I would like to take the opportunity to express my appreciation of the fine job you are doing in covering the refrigeration field for your readers. Like thousands of others I grab the News the minute it comes in and read it from cover to cover. Keep up the good work!—Art de Desrochers, Reliance Refrigeration, Sales, Service, Exchange, 5512 University Way, Seattle, Wash.

Too Many Outlets—Coupled with Utility Competition—Cut Profits Of Ann Arbor Dealers

By Winifred Hughes

ANN ARBOR — Twenty-two electrical appliance dealers operating in a town of 28,000 inhabitants, of which approximately a third are students—this description of the refrigeration set-up in quiet Ann Arbor, one gets an inkling of what the chief problems here must be, what the exact status of the companies is, and how much profit each firm takes from the whole.

Ann Arbor is a good town in which to sell refrigeration. It has a source of good paying, if indifferent, customers in the University faculty members, the dealers agree. But in the viewpoints of these merchants, the superfluous number of dealers operating in the field, and the deplorable price cutting tactics of one of the leading dealers creates a situation sufficiently unpalatable to make some long established firms desire to "get out of the game for good."

"If we could find any other article to tide over the summer selling season, we'd never carry electric refrigeration," one dealer said, and his opinion was reiterated by others throughout the town.

Utilities Worst Competition

The utilities present perhaps the biggest single competitive menace to other dealers in the town. Both the gas and electric power companies sell refrigeration.

"Where they should be helping us out because we are constantly working for them and aiding them in building up their current load, they are making it hard for retail electrical merchants to sell," said William Hand, manager of Grinnell Bros., who handle Norge refrigerators in Ann Arbor.

Mr. Hand told us then that new line installation enabled the power company to get appliance sales by playing up the service which they offer the customer, and making the purchase of the appliances seem simple, easy, and inexpensive.

"They know when a new electric line is to be run out through some part of the country around here. So men go from the power company and call on the farmers' wives, or residents in the rural districts before the electricity is connected.

"You're going to have electricity out here very soon. While the men are wiring your home, we're going to have them wire your kitchen for an electric range. You'll want one, and eventually you'll buy one, so we'll put it in now."

Very Low Payments

Such, in Mr. Hand's words, is the approach of the power company appliance salesman. "Cost? Well, we'll take care of that. First of all, we'll put the new range in and you can use it for three months, at a cost of \$1.75 a month. This will be added to your monthly bill. Then at the end of this time, if you want to buy the range, your regular payments will start, and we'll deduct what you've already paid from the total.

"You won't be bothered by collectors, you won't have to send your money away, and you won't have to pay more than two or three dollars a month. You can just pay when you come in with the money for your electric light bill," the utility salesman says.

"Then," said Mr. Hand, "dealer Jones hears that a new line is being run in this rural district. So he says to himself: 'I'll go out there and sell the people some appliances before anyone else gets to them.' So he'll go out. He'll tell the farmer's wife: 'I'm Jones of the Jones Appliance Co.'

"Jones? Jones? I never heard of that company, what do you sell?" she will ask.

"Refrigeration," says Jones.

No Chance for Jones

"But Mr. Jones, that's all taken care of. I'm buying mine from the power company. They've been out here, and they've been so good about putting in the electricity, and about giving service, that I know they are the best ones to purchase my refrigerator from."

"So Mr. Jones will go home without even a chance at the sale," he shrugged. "The custom of the utility to give such service as exchanging light bulbs and giving new cords on appliances are added wedges to sell appliances to the rural customers," he stated. "And they do it time and again."

But the competition which Mr. Hand puts even before that from the utilities is right inside the family—from the two other Norge dealers operating in Ann Arbor. One of them, he says, has been selling Norges for only a short time; before that, Grinnell's and the other dealer got along beautifully

without stepping into each others' profit-books.

The situation has so lessened Grinnell Bros.' sales that the 1936 season doesn't come up to 1935 sales. "But business isn't bad. We're still selling, even though the active season has died down."

Of Grinnell Bros.' position regarding price cutting, Mr. Hand declared: "We consider that in giving an \$8 or \$9 trade-in allowance on an old refrigerator, we are paying an exorbitant price, because you can buy all the old ice boxes you want—good ones, too—for \$3 or \$4.

\$29 Allowance Demanded

"A short time ago, I decided to try and discover for myself just what discounts competitors were offering. I had a lead to a sale where I thought we were in on the ground floor. But we weren't—we were in the basement. I offered the prospect an allowance of \$14.50 and he laughed at me.

"So, as long as I was doing it just to prove something to myself, and there was no salesman's commission involved, I kept raising the allowance. I finally got it to \$24.50, and the prospect said: 'If you'll add \$5 to that, I'll do business with you.' So I told him to forget the whole transaction, that I wouldn't make such an allowance, and that I was just trying to see what the others were giving."

Since distributor's salesmen are paid commissions not only on new sales, but on acquiring new retail outlets, they just get as many merchants to handle their goods as they can, Mr. Hand believes, without using any "pick and choose" policies.

Solution for the problem will lie in the selective choice of retail stores. Only by choosing merchants who are conservative, who have been in business a long time, and who are interested in staying in it, can the undesirable type of dealer be weeded out, the company manager emphasized.

Price Cutting Not for Grinnell's

Grinnell's, for its part, isn't interested in price cutting, Mr. Hand averred. Its policy is conservative, and it carries merchandise definitely belonging in the higher priced group. It has been in the selling field for a number of years, and intends to stay.

So when price is the central pivot in a sale, and customers state that they can get reductions of \$20 or \$25 from another dealer, it is the policy of this firm to tell the customer: "But he can't give you the service that should go with it. The 10-year or five-year guarantee is absolutely meaningless in your case, because the dealer can't possibly afford to service refrigerators when he has cut his profits so much. He will be out of business within three or four years. Then your guarantee won't mean a thing."

No High Pressure Methods

While sales are lost because of this refusal to pare prices to the bone, the dealership makes no other efforts to counteract. Throughout the summer selling season, it runs an average of two or three weekly advertising insertions in the Ann Arbor papers.

Likewise Grinnell's makes no attempt to get the university building installation trade, but many of its sales are to members of the university faculty. No special method of reaching them is employed.

"They can't be bothered. If they are interested, they come down to the store and do their own investigating. Since many of them have bought radios and other appliances from us, naturally they come in when they are in the market for an electrical refrigerator or range."

Asserting that he is a faithful reader of the News, and that he has learned most that he knows about refrigeration from reading it, Mr. Hand said that he had but one suggestion to make:

"Advertise and run pictures of a refrigerator that can be manufactured for a low price, sold for a little more, offer a flat rate trade-in allowance of \$25 on old ice boxes and than have a big bonfire."

Appliances & Oil Burners Keep French Co. Busy

"If you don't believe that Ann Arbor is a good place to sell electric refrigeration, just go down to the ice company and watch all the ice being sent out every day," said Mrs. Edward B. French, who with her husband, Edward B. French, comprises the French Home Equipment Co., Frigidaire dealer.

Although she believes that this town is a good refrigerator selling field, Mrs. French told us that the amount of saturation is relatively

high. "You can walk down any number of streets here, and find house after house equipped with some type of mechanical refrigeration," she said.

Business for this company has been "better than last summer," according to Mrs. French. "Funny thing, though, where last year the people wanted to see and buy only the cheapest and smallest refrigerator we have, this year they've bought mostly 6 and 7-cu. ft. models," she said. "We've only sold about three or four models under 6 ft., this season."

University faculty members are already pretty well stocked up with major appliances, she added. They make good customers, however, because they get a steady income. And they are good about paying their bills.

Low Price—Good Service

Selling units for use in university buildings has two big drawbacks—first, the purchasing department wants a price on the units, and second, the university demands instant service. If a unit gets out of order, they expect to have a service man sent up within 10 minutes.

However, approximately 50% of the refrigerators installed in college buildings are Frigidaires, Mrs. French stated. Offering price concessions in order to get a sale is not the French Home Equipment Co.'s policy, we were told.

As far as competitive concerns go, this dealership believes that the competition offered by a mail order house in Ann Arbor, while considerable, is less cutthroat than that of a competitive dealer in town. "We can't fight him," she said. "We just have to let him go ahead."

Right now the firm is enjoying a gratifying amount of business on its oil burners. "Since July we've had so many orders—we've got all we can do to fill them," Mrs. French said. Of the summer sales on electric re-

frigeration, July was top month with approximately 20 sales, she told us.

Three salesmen are hired by the store to sell refrigeration during the busy season. The men handle other appliances sold by the store at the same time. "If they didn't, they'd starve to death, because they couldn't earn enough money just selling electric refrigeration the year round," Mrs. French stated.

G-E Dealer Looks Forward To Commercial Sales

Wikel Johnson Co., General Electric dealer here, has no special fall campaign or promotions planned on its refrigeration, Joe Kinney, salesman, told us.

Mr. Kinney, besides refrigeration, has been taking care of air conditioning prospects and of customers interested in complete all-electric kitchens.

The firm has made one air-conditioning installation recently. It was a residential unit, for the bedroom of a couple who had asthma. They read about air conditioning and came to the store to investigate.

Although the company so far has made few commercial installations, merchants here are definitely interested in it, the salesman told us. "They'll listen to you tell about it and let you make a survey of their requirements; but when it comes to actual installation, the price is too large."

Conditioning Outlook Good

It is Mr. Kinney's expectation, however, that within the next year there will be lots of cooling equipment sold in Ann Arbor.

The General Electric outlet has the services of its own engineer, drawing up specifications for air-conditioning installations for prospective customers.

People in Ann Arbor are becoming more interested in all-electric kitchens, in Mr. Kinney's opinion. The store has

one of its own which has proved an attraction point for Ann Arborites.

Of the refrigerators purchased for university buildings, a large percentage are General Electrics, we were told. It does no good to solicit the business from the purchasing department, the salesman said. "If they want equipment, price is usually the first factor they consider; if they are going to buy, they do."

Tough competition from the mail order house is one of the central discordant items in the refrigeration selling field in Ann Arbor, Mr. Kinney believes. "Of course most of that concern's sales are to people of the price-conscious type. When price is the main question, we don't stand a Chinaman's chance. We never have, but we don't feel badly about it."

Price cutting, this salesman states, is among the unimportant factors in Ann Arbor. "There are allowances made on old ice boxes traded in. We don't like to do this, but we have to."

Ann Arbor Office of Edison Co. Makes Good Record

Although Mr. J. F. McNutt, supervisor of range and refrigerator sales for the Detroit Edison Co.'s Ann Arbor branch, was not in his office when we went to visit him, Miss Dorothy Ellis, his assistant, told us a little about the work of this department, which has been operated by the utility for not quite a year.

The department handles Kelvinator, Westinghouse, and General Electric refrigerators. Seven salesmen are employed. They are now doing an increased amount of canvassing for prospects throughout the Ann Arbor territory, Miss Ellis stated.

To give an estimate of the amount of selling which the company's refrigeration department does, Miss Ellis cited the weekly report for two weeks ago, when 75 sales were made.

That's Your Assurance of Rust-Free Life



THE laboratory and the tests of time are both proving the value of Bonderizing. Thousands of Bonderized rust-free refrigerators in humid kitchens all over the world are convincing evidence of extra quality.

Modern buyers are informed buyers. They are aware of the latest scientific methods for product protection. Bonderizing is one of those modern and efficient processes that assure a greater measure of service to the refrigerator cabinet. It appeals to the prospect because it is assurance of greater satisfaction . . . easier maintenance . . . lasting beauty . . . a more stable finish that will not check or peel.

Bonderizing not only holds the finish, but prevents the spread of rust around the accidental scratch or dent.



For more than 21 years, we have devoted our entire time, talent and energy to the improvement of rust-proofing methods. A book showing what a refrigerator salesman should know about Bonderizing is available. Write for one today.

PARKER

RUST-PROOFING

processes

BONDERIZING • PARKERIZING

PARKER RUST-PROOF COMPANY • 2197 East Milwaukee Avenue, Detroit, Michigan

Air Conditioning

New Air-Conditioning Installation in M & E Offices Ends Twenty-Year Attack On Atmospheric Control Problem

PHILADELPHIA—Recent completion of an air-conditioning installation in the general offices of the Merchant & Evans Co. here marks the end of a 20-year attack on the problem of providing proper indoor atmospheric conditions for the office workers.

In working on the problem Merchant & Evans did considerable pioneer work in developing a refrigeration compressor designed to function at maximum efficiency in an air-conditioning system, according to the story related by S. J. Benn, chief engineer of the company.

It was in 1916 that first attempts were made at summer air conditioning in the office. At that time experiments were tried with a washed-air system. Because of the large size of the general offices, and inadequate information concerning the method of cooling, the system only partially met the problem.

The art of ventilating, says Mr. Benn, was in its infancy and the general arrangement of the duct work brought many complaints from employees, so the system was abandoned.

With the development of the new M&E commercial refrigeration units, the developed method of conveying air, and the greater knowledge of ventilating methods, a new system was installed.

This new system, now in operation, is arranged to circulate the dehumidified and cooled air at proper points in the general offices so as to distribute the air equally into the various parts of the partitioned offices. A suitable return in the center of the building is so placed that at least 60% of the air is recirculated.

On the left side of the cooling unit a suction duct has been installed to carry fresh air to the blower. This conveyor has a damper arrangement inside of the duct so that the amount of entering fresh air can be properly regulated.

The compressor, a newcomer to the line, is a V-4 cylinder type, having 3 1/2 inch bore and 3 1/2 inch stroke, operating at 460 r.p.m. from a 15-hp. motor. Freon is the refrigerant.

Compactness of design is a feature of this unit, as it can be placed in a space 55 inches wide by 32 inches deep. This includes the water-cooled

condenser which is mounted directly under the compressor, and in the base assembly.

To eliminate the tremendous tension required to prevent the belts on the motor pulley slipping due to the high torque requirements in refrigeration motors, a Rockwood automatic belt tightener was used. This is said by Mr. Benn to eliminate considerable power loss, and at the same time acts as an automatic take-up as the belt stretches in operation.

No attempt was made to cool the building to 70° F., only to drop the room temperature from 6 to 10° F. below the outside temperature and to achieve a relative humidity of about 50%.

"We have had many visitors enter the building and they have usually disagreed about the temperature," said Mr. Benn. "There have been times when the outside temperature was 95° F. and the inside temperature in our building 87° F., with a relative humidity of 52%, and most people would doubt the reading of the thermometers placed in various parts of the building, as the temperature seemed to be much lower."

Gar Wood Conditions Deephaven Kennels

DETROIT—Frank H. Dewey, manager of the air-conditioning division of Gar Wood Industries, Inc., here, received an order from H. K. Johnson of the company's Minneapolis branch for a Gar Wood Tempered-Aire unit to be installed in the Deephaven Kennels there.

Equipped with a 102-A Tempered-Aire system, the kennels are claimed to be the most modern housing for canine creatures in America. Main structure houses about 50 dogs. Workroom, kitchen, and office, together with the heating and pump room occupy the front part of the building. Adjoining the work room are quarters for the puppies.

This order in Mr. Johnson's opinion should be the forerunner to others in the same field interested in breeding healthier, stronger dogs.

Simplified Humidity Control Evolved by Supreme Electric

ROCHESTER, N. Y.—A simplified humidity control for air-conditioning equipment recently has been developed by Supreme Electric Products Corp. here.

The control consists of a Supreme solenoid water valve, mounted on an insertion humidistat manufactured by Julien P. Friez & Sons, Inc., Baltimore.

Contact-making humidistats usually require a solenoid water valve to release or check the water supply as determined by the humidistat. Many advantages are secured, company officials say, by combining these two items in mounting as one unit.

The insertion humidistat often is preferred for installation in "cold air returns" and cabinet-type conditioners. Especially in large installations does the insertion-mounting humidistat provide better average humidity than can be secured from a wall-mounted instrument, officials claim.

The electric valve is designed especially for humidity application. It has a cast iron case with terminal chamber for BX connections. Installation is simplified, only one electrical connection being necessary for the unit.

For supplying humidity, several types of Supreme spray nozzles with self-cleaning orifice are available.

Although the control is manufactured and assembled by Supreme Products, parts may be purchased separately and assembled at destination, if preferred.

Chicago Installations During September Total 297 Hp.

CHICAGO—Air-conditioning installations made in this city during September totaled 14, for a horsepower load of 297 1/2, according to a survey by Commonwealth Edison Co.

Twelve of the jobs installed during the month were divided evenly into three classes: restaurants, offices, and industrial applications.

Largest job installed during September was in Walter H. Johnson candy factory, 341 West Superior, and totaled 80 tons of refrigeration, with a connected load of 92 1/2 hp. An installation of considerable size was also made in Fortune Brothers brewery, 725 West Van Buren. This job totaled 60 tons, with 68 connected hp.

Restaurant jobs installed during the month included Al's Cafe, 1623 North California, 8 hp.; B/G Restaurant, Dearborn and Davison, 17 hp.; Clover Bar, 173 North Clark, 11 hp.; and De Mets, 312 West Madison, 3 hp.

General office installations included General Machinery & Mfg. Co., Harrer Studio, and Tribune Tower. A 2-hp. job was installed in the private office of I. S. Berlin, 522 North Clinton.

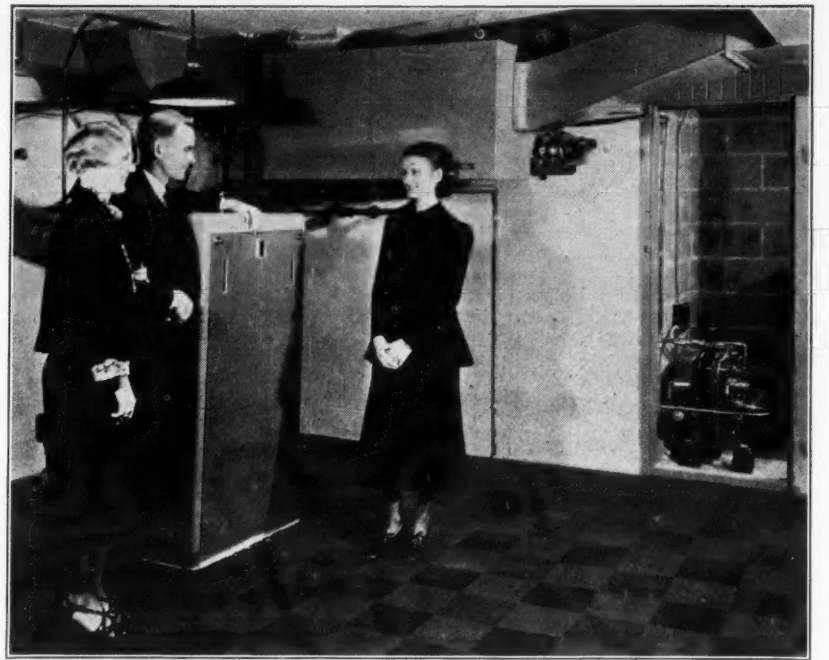
Peck-O-Fun and Vogt Candy companies installed systems with capacities of 20 and 10 tons, respectively. Other jobs put into service during the month included one of 2 1/2 hp. in Krauspe Undertaking Co., and another, of 11 hp., in Blecker Beauty Shop.

Name and Address of Customer	Class of Business	Tons	Hp.
Blecker Beauty Shop.			
Sears Roebuck-S. Homan	Beauty Parlor	10	11
Peck-O-Fun, 1248 W. 37th St.	Industrial—Candy	20	20
Vogt Candy Co., 1933 S. Halsted St.	Industrial—Candy	10	10
Walter H. Johnson, 341 W. Superior	Industrial—Candy	80	92 1/2
Fortune Bros. Brewing, 725 W. Van Buren	Industrial—Beer	60	68
General Machry. & Mfg. Co., 2634 N. Keeler	General Office	5	6 1/2
Harrer Studio, 155 E. Superior	General Office	1 1/2	1 1/2
Tribune Tower, 435 N. Michigan Ave.	General Office	3 1/2	4 1/2
I. S. Berlin, 522 S. Clinton	Private Office	1 1/2	2
Als Cafe, 1623 N. California	Restaurant	...	8
B/G Restaurant, Dearborn & Division	Restaurant	15	17
Clover Bar, 172 N. Clark St.	Restaurant	10	11
De Mets, 312 W. Madison	Restaurant	3	3
Krauspe Undertaker, 3905 Lincoln Ave.	Undertaker	...	2 1/2
		259 1/2	297 1/2

San Antonio Air-Conditioning Installations

Installation	Prior to 1935 No.	Prior to 1935 Hp.	During 1935 No.	During 1935 Hp.	First Half 1936 No.	First Half 1936 Hp.	Total No.	Total Hp.
Evaporative	12	395.50	6	0	0	0	12	395.50
Airtemp	0	0	1	1	1	1	2	2
Baker Ice Machine	1	32	0	0	0	0	1	32
Brunner	0	0	1	3.50	0	0	1	3.50
Carrier	10	1341.50	5	167	5	499.25	20	2007.75
Fairbanks-Morse	0	0	1	7.50	0	0	1	7.50
Frighdaire	19	68	10	53.25	8	126.7	37	247.95
Frick	0	0	0	0	2	27	2	27
General Electric	0	0	1	0.50	1	1.50	2	2
Howe Ice Machine	2	216.50	0	0	0	0	2	216.50
Ilg	1	28	0	0	0	0	1	28
Jerrick	3	230	0	0	0	0	3	230
Kelvinator	0	0	3	25.75	0	0	3	25.75
Lipman	1	15.75	0	0	0	0	1	15.75
Servel	0	0	1	30	0	0	1	30
Strang	5	9	1	1.50	1	1	7	11.50
Westinghouse	0	0	4	110.50	1	0.50	5	111
Wittenmeier	4	1536	0	0	0	0	4	1536
Worthington	1	422.50	0	0	0	0	1	422.50
York	2	630.25	2	596	0	0	4	1226.25
Total	61	4925	32	996.50	17	656.95	110	6578.45

Kelvin Home Conditioning Equipment



Heating and air-conditioning equipment for the new Kelvin Home is housed in this small basement room. At the left is the oil burner, which is thermostatically controlled; at the right, the Kelvinator condensing unit that supplies refrigeration for summer cooling. Above are the ducts which circulate the warm or cool air throughout the house.

Comfort of Air-Conditioned Train Leads Lumberman to Buy Home Installation

TUSCALOOSA, Ala.—Inspired some time ago by unexpected comfort which he encountered in an air-conditioned train, D. O. Parker, prominent lumberman and member of the Tuscaloosa City Commission, determined some day to have an air-conditioned home. In July Mr. Parker became the owner of the first air-conditioned home in Tuscaloosa.

Equipment manufactured by Carrier was sold to Mr. Parker by C. B. Cosby of Alabama Power Co. The installation was by C. G. Robinson, western division service supervisor, and Joe Grissom, Tuscaloosa service man, under the general supervision of Chas. T. Brasfield Jr.

The Weathermaker, consisting of coils over which air is circulated by a blower type fan driven by a 1/2-hp. motor, cools, dehumidifies, and cleans the air. Air drawn from the house through return ducts is mixed with

a small quantity of air from outside, and after leaving the Weathermaker passes into a manifold and is distributed by ducts to the various rooms.

Condenser cooling is accomplished by an evaporative condenser, air for which is taken from the basement and discharged outdoors. A very small amount of water is used in the process.

The compressor is mounted on a concrete base set in the earth floor of the basement, and the compressor and Weathermaker are mounted on an angle-iron frame whose legs are set in concrete blocks. As a precaution against vibration and noise, no moving machinery was attached directly to the building.

As the basement is without a drain, a sump pump was installed to take care of excess water. This water is not wasted but is discharged into a gold fish pond on the lawn.

Minneapolis-Honeywell Builds Fall Advertising Campaign Around Benefits of Air Conditioning

MINNEAPOLIS — Fall advertising campaign of Minneapolis-Honeywell Regulator Co., manufacturer of control systems, is built entirely around the benefits which automatic heating and air conditioning have for the customer.

Typical of its 1936 autumn material is the broadside poster which has as its theme: "Make life worth while at work, at play, at home, by installing automatic heat and air conditioning." In this broadside, mailed to 35,000

dealers and manufacturers, and in the three colorful poster blow ups picturing the comfort possibilities gained by installation of equipment, the Minneapolis-Honeywell name is in small type and the weight of the advertising is given to the dealer.

This campaign will carry a total of 76,000,000 messages to customers in every city and town. It is a continuation of a similar campaign which ran in five national publications during the spring of the year.

In addition to the posters, the company has a new line of window and counter displays, and a quantity of new consumer booklets and folders.

condensers evaporators

for electric refrigeration
and air conditioning
applications — domestic
and commercial.

LONG MANUFACTURING DIVISION
BORG-WARNER CORPORATION

LONG

DETROIT, MICH.
WINDSOR, CAN.

NEW ZENITH REFRIGERANT FILTER

Two years of successful operation in the better known commercial refrigerator units has proved the value and efficiency of Zenith Filters.

These units are now available to the Jobbing Trade. No other filter compares with a Zenith.

Read These Features
Patented Element. Full Line of Sizes. Quickly Cleaned. Easily Installed. Ample Capacity. Positive Protection. Leak-proof. Corrosion Proof.

For use with Sulphur Dioxide, Freon or Methyl Chloride.
See the Zenith Refrigerant Filters at the Jobbers' Convention in Memphis, November 11th.

ZENITH CARBURETOR CO.
Subsidiary
BENDIX AVIATION CORP.
Detroit, Michigan

Survey of 389 Heating and Plumbing Contractors Reveals That 68% Operated at a Profit During 1935

NEW YORK CITY—Annual Dun & Bradstreet survey of retail merchandising for 1935 reveals that 227 heating and plumbing contractors out of 389 contacted operated at a profit during that year. The remaining 41.6% operated at a loss.

Every firm reporting, however, had increased its sales over 1934 by degrees ranging from 10.6 to 41.4%, an average of 23.7%. Over 25,000 concerns in various fields of retail merchandising contributed to the survey.

Individual operating ratios were calculated by these formulas: net profit or net loss equals gross profit minus total overhead expense; total overhead expense equals total annual operating cost; gross profit equals net sales minus cost of goods sold; cost

of goods equals beginning inventory plus merchandise purchases minus closing inventory; mark-up on cost equals gross profit divided by cost of goods sold; inventory ratio equals net sales divided by closing inventory.

Heating and plumbing contractors doing the largest business operated, without exception, at the lowest gross margin. Firms doing over \$100,000 business operated at a margin of 36.1. Only firms operating above 50% margin were those doing business of \$20,000 or less.

Correspondingly, total overhead expense decreased with amount of business transacted. Concerns handling over \$50,000 worth of business were the only ones to have a total overhead below 40%, while with those handling

less than \$10,000 of business, total overhead rose to 51.8%.

Gross margin and realized mark-up figures, when analyzed by population groups, indicate that the small town merchants are able to sell at a greater gross margin and realize a higher mark-up than larger-city dealers.

Inventory turnover increased correspondingly with the size of the city and size of the firm, varying from 2.7 to 9.4%.

Companies operating at profit had an average total overhead of 43.4%, average gross profit or margin of 49.8%, and average mark-up on cost of goods sold of 99.4%.

Typical net sales for all firms reporting totaled \$14,000; for profitable concerns only, \$15,700.

Operating Data for 389 Contractors Reporting in Dun & Bradstreet Survey

Size of Concern (1935 Sales in Thousands of Dollars)	Under 10	10 to 20			20 to 30			30 to 50			50 to 100	100 & Over
Size of Town (1930 Census in Thousands)	All	Under 20	20 to 100	100 & Over	Under 20	20 to 100	100 & Over	Under 10	20 to 100	100 & Over	All	All
1 Number of Concerns Reporting...	138	58	30	19	25	17	16	21	14	11	23	17
Profit and Loss Statement (in Percentages of Net Sales):												
2 Cost of Goods Sold	47.2	51.3	47.5	43.1	56.7	52.3	51.5	53.3	52.4	55.5	60.3	63.9
3 (a) Overhead Expense: Total...	51.8	44.1	51.0	54.5	41.1	46.0	47.4	45.7	44.2	40.8	37.3	33.4
(b) Salaries, Owners and Officers	22.6	15.6	15.6	15.6	9.7	9.7	10.4	10.2	11.0	9.2	6.7	4.7
(c) Salaries, Wages of Employees	12.8	13.8	22.2	23.5	14.1	23.9	19.4	19.6	22.9	16.0	18.2	15.3
(d) Rent	4.7	2.0	2.6	2.8	1.4	1.5	1.5	1.4	1.5	1.4	1.5	1.0
(e) Advertising	0.6	0.4	0.5	0.4	0.4	0.5	0.6	0.6	0.6	0.7	0.6	0.7
(f) Light and Heat	1.1	0.6	0.8	0.5	0.8	0.5	0.4	0.6	0.5	0.2	0.4	0.2
(g) Taxes	0.9	0.9	1.0	0.7	0.7	0.8	0.2	0.4	0.8	0.3	0.7	0.3
(h) All Other Expenses	9.1	10.8	8.3	11.0	14.0	9.1	14.9	12.9	6.9	13.0	9.2	11.2
4 Profit (or Loss)	1.0	4.6	1.5	2.4	2.2	1.7	1.1	1.0	3.4	3.7	2.4	2.7
Merchandise Ratios:												
5 Gross Margin (% of Net Sales)...	52.8	48.7	52.5	56.9	43.3	47.7	48.5	46.7	47.6	44.5	39.7	36.1
6 Realized Mark-up (% of Cost)....	112.0	95.1	110.7	132.2	76.5	91.3	94.3	87.7	91.0	80.3	65.9	56.6
7 Inventory Turnover (Times per Year)	2.7	3.9	5.4	5.3	3.7	4.0	5.1	4.3	4.4	6.0	4.3	9.4
8 Ratio—Net Sales to Closing Inventory	5.8	7.3	12.1	12.5	6.1	8.4	9.3	6.9	8.8	10.9	6.1	13.4
Other Information:												
9 Typical % Change in Sales 1934-35	+16.7	+25.4	+30.9	+10.6	+24.2	+31.2	+41.4	+27.3	+14.6	+16.0	+38.6	+15.5

Data for 227 Concerns Reporting Profits in 1935

Size of Concern (1935 Sales in Thousands of Dollars)	Under 10	10 to 20			20 to 30			30 to 50			50 to 100	100 & Over
Size of Town (1930 Census in Thousands)	All	Under 20	20 to 100	100 & Over	Under 20	20 to 100	100 & Over	Under 20	20 to 100	100 & Over	All	All
1 Number of Concerns Reporting...	67	40	20	13	15	11	10	10	7	5	17	12
Profit and Loss Statement (in Percentages of Net Sales):												
2 Cost of Goods Sold	40.7	51.2	47.3	44.8	54.1	50.9	53.1	54.1	51.1	54.1	59.7	63.9
3 (a) Overhead Expenses: Total...	49.1	40.3	46.7	51.8	39.7	45.7	41.9	41.7	41.1	35.2	33.7	31.9
(b) Salaries, Owners and Officers	22.6	15.6	15.6	15.6	9.7	6.7	9.7	9.0	...	...	6.7	4.7
(c) Salaries, Wages of Employees	8.9	15.1	17.1	19.9	13.4	21.5	17.7	16.0	...	...	16.6	15.3
(d) Rent	4.4	1.9	2.5	2.0	1.1	1.5	1.8	1.5	...	...	1.0	1.2
(e) Advertising	0.6	0.4	0.5	0.3	0.4	0.4	0.6	0.6	...	...	0.5	0.7
(f) Light and Heat	1.0	0.5	0.7	0.4	0.6	0.5	0.4	0.6	...	...	0.4	0.2
(g) Taxes	0.6	0.9	0.9	0.7	0.5	0.7	0.2	0.3	...	...	0.6	0.2
(h) All Other Expense	11.0	5.9	9.4	12.9	14.0	14.4	11.5	13.7	...	...	7.9	9.6
4 Profit (or Loss)	10.2	8.5	6.0	3.4	6.2	3.4	5.0	4.2	7.8	10.7	6.6	4.2
Merchandise Ratios:												
5 Gross Margin (% of Net Sales)...	59.3	48.8	52.7	55.2	45.9	49.1	46.9	45.9	48.9	45.9	40.3	36.1
6 Realized Mark-up (% of Cost)....	146.0	95.5	111.6	123.4	85.0	96.6	88.5	85.0	95.8	85.0	67.6	56.6
7 Inventory Turnover (Times per Year)	2.4	3.7	6.1	5.0	4.3	5.0	5.8	4.7	5.8	6.8	4.7	9.8
8 Ratio—Net Sales to Closing Inventory	6.1	7.1	13.9	11.4	6.4	8.4	10.0	10.1	10.2	9.5	7.2	14.9
Other Information:												
9 Typical % Change in Sales 1934-35	+23.7	+23.7	+38.2	+32.9	+37.0	+44.8	+50.0	+36.0	+14.6	+11.7	+40.6	+33.7

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and Air Conditioning
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McCord Radiator & Mfg. Co.
DETROIT, MICH.

Houston Utility Uses 'Phototials' Effectively In Telling Air Conditioning Story

HOUSTON, Tex.—"Phototials," combining photographs with personal testimonials, are being used effectively by Houston Lighting & Power Co. to stimulate sale and installation of refrigerators and air-conditioning equipment.

Ten commercial and two industrial salesmen have been provided with sales manuals containing actual photographs of local installations, and statements of how these installations have definitely increased the trade of that particular establishment.

Forceful photographs are shown of people crowding into theaters, jamming restaurants and eating places, thronging into retail shops, smiling happily as they have their hair trim-

med or their nails manicured—and all because of air conditioning, refrigeration, or improved lighting.

Apropos slogans encourage cafes and dining rooms to employ air conditioning for their patrons' pleasure, urge merchants to light their show windows at night, advise owners of gasoline stations to use floodlights and to purchase beverage coolers.

These same pictures are used also for a series of advertising folders mailed to all prospects in these various fields of electrical development. Prospect lists are broken down into 24 classifications, and 24 different types of folders are prepared, each appealing to a special class of trade or dealing with a special problem.

Engineering Developments Eliminate Concern About Water Shortage, Erickson Claims

NEW YORK CITY—City officials need not be concerned over their water facilities, despite the great increase in air-conditioning installations during the past two years, E. V. Erickson, Carrier Engineering Corp. engineer, told the New York chapter of American Society of Refrigerating Engineers here last week.

Every air-conditioning job requires water, he said, and the maximum demand is during the summer months, when other water requirements are also at their peak. Increased installations of equipment are reflected in lowering of reservoirs during summer months, decreasing water supply pressure.

Engineers, Mr. Erickson said, have anticipated water shortage possibilities, and have already developed equipment which eliminates from 90 to 95% of normal water requirements.

Equipment made by Carrier, he added, has been used in business and industry during the past four years, and is already saving water at the rate of more than 1,800,000,000 gallons per year. This quantity of water, he declared, is enough to supply the needs of a city of 50,000.

With the use of present equipment, Mr. Erickson said, 10 times as much air-conditioning equipment can now be installed without increasing the amount of water used today.

Comparison of Average Record of 227 Profitable Concerns with That Of All Concerns Reporting

	All Concerns Reporting	Profitable Concerns
1 (a) Number of Concerns Reporting	389	227
(b) Aggregate Net Sales	\$ 9,688,400	\$6,229,600
(c) Typical Net Sales	\$14,000	\$15,700
Profit and Loss Statement (in percentages of Net Sales):		
2 Cost of Goods Sold (Cost of Materials)	51.3%	50.2%
3 (a) Overhead Expense: Total	46.3%	43.4%
(b) Salaries of Owners and Officers	15.6%	13.8%
(c) Salaries and Wages of Employees	16.5%	15.2%
(d) Rent (63% of concerns reported rent)	2.2%	2.1%
(e) Advertising	0.5%	0.5%
(f) Light and Heat	0.6%	0.6%
(g) Taxes	0.7%	0.6%
(h) All Other Expense	10.2%	10.6%
4 Profit (or Loss)	2.4%	6.4%
Merchandise Ratios:		
5 (a) Gross Margin (Percent of Net Sales)	48.7%	49.8%
Usual Range } (b) Upper Limit	57.1%	57.8%
of Experience } (c) Lower Limit	39.3%	42.3%
6 Realized Mark-up (Percent of Cost)	95.1%	99.4%
7 (a) Inventory Turnover (Times per Year)	4.1	4.3
Usual Range } (b) Upper Limit	7.6	8.1
of Experience } (c) Lower Limit	2.2	2.3
8 Ratio—Net Sales to Closing Inventory	7.3	8.3
Other Information:		
9 Typical Percent Change:		
(a) in Sales 1934-1935	+23.7%	+27.5%
(b) in Inventory during 1935	+4.0%	+7.0%
Credit Policies:		
(a) Number of "Cash" Concerns (over 90% Cash)	30	19
(b) Number of Concerns Selling on Open Credit	302	176
(c) Their Typical Proportion of Credit Sales	80%	80%
(d) Number of Concerns Selling on Installment	148	88
(e) Their Typical Proportion of Installment Sales	10%	10%

23 Installations Made Recently in Baltimore

BALTIMORE—Twenty-three air-conditioning systems have been installed here recently at a total cost of \$94,000.

Establishments now being equipped with air conditioning include the Hausner restaurant, where Maryland Refrigerating Co. is installing a York system; executive offices of the Baltimore branch of Cherry-Burrell Corp., dairy and ice cream equipment manufacturers; and the new Wonder Clothes Shop.

bination of industrial and comfort cooling with emphasis upon the introduction of air as clean as mechanically possible, was designed under specifications issued by a Boston consulting engineer, consultant for the Mahady company.

Unit housing the various operations in the handling of suture was built within a large room on the fourth floor of the building occupied by the company. The structure was divided into several smaller rooms.

Tafel Installs 6 Large Equipment Orders

CINCINNATI—Tafel Refrigeration Co., here, handling Westinghouse air-conditioning equipment, has made six large installations within five months, according to John S. Kelley, vice president and sales manager.

Shortly after taking on the Westinghouse franchise the company sold to and installed a good sized system for Frieburg Mahogany Co. This was followed by two smaller installations, then by a 25-ton system for Uptown Theater. Tafel obtained the contract also for air conditioning Potter's Shoe Store.

W. B. Cott, air-conditioning engineer, heads that department.

Tafel in Cincinnati is associated with Tafel Electric Co. in Louisville, Nashville, and Lexington of which Paul Tafel is president.

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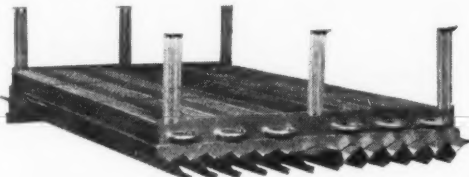
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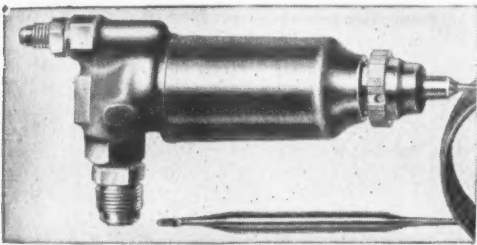
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Write for bulletin on complete line covering refrigerating appliances, liquid line filters, dehydrators, acid neutralizers, standard parts and materials, service tools, shaft seals, bearing metals and parts. Descriptive literature will be gladly furnished on any or all of these lines on request.

AMERICAN INJECTOR COMPANY 1481-14th Street, Detroit, Mich.

Toss Out The OLD Slip in The NEW

It's Easy With EXACT REPLACEMENTS

For more than ten years we've studied the problems of the refrigerator service repair man. What we've learned has helped us to build stronger, more dependable Thermostats—and more EXACT REPLACEMENTS than you'll find in any other line. Write for new Bulletin, Free.

Ranco, Inc., Columbus, Ohio

RANCOSTAT

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Each of the following volumes contains all weekly issues of Electric Refrigerator News issued during a period of four months. Stiff paper board covers.

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Vol. 11—Jan. 3 to April 25, 1934. (Serial Nos. 250 to 266.)
Vol. 12—May 2 to Aug. 29, 1934. (Serial Nos. 267 to 284.)
Vol. 13—Sept. 5 to Dec. 26, 1934. (Serial Nos. 285 to 301.)
Vol. 14—Jan. 2 to April 24, 1935. (Serial Nos. 302 to 318.)
Vol. 15—May 1 to Aug. 28, 1935. (Serial Nos. 319 to 336.)
Vol. 16—Sept. 4 to Dec. 25, 1935. (Serial Nos. 337 to 353.)
Vol. 17—Jan. 1 to April 29, 1936. (Serial Nos. 354 to 371.)
Vol. 18—May 6 to Aug. 26, 1936. (Serial Nos. 372 to 388.)

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Business News Publishing Co., 5229 Cass Ave., Detroit, Mich.

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Refrigeration Instruments by Marsh

MARSH MERKUSTAT MERCURY TUBE ELECTRICAL CUT-OUT is a pressure operated electrical control. A bourdon tube in conjunction with a snap-action movement makes and breaks mercury-to-mercury contacts.

Constructed with bronze bourdon tube for any pressure medium which will not deteriorate bronze or with steel bourdon tube for ammonia and carbon dioxide.

As installed upon the compression side of any commercial refrigeration unit, this instrument acts as a safety electrical cut-out to prevent the building up of excessive pressures.

Its dependability in operation and correctness in principle and design eliminates the constant supervision, numerous breakdowns and high service costs often experienced through the failure of control mechanism.



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Public Likes Facts on Research In Air Conditioning, Donovan Tells Sales Executives

By J. J. Donovan, Manager,
Air Conditioning Department, General Electric Co.*

THIS so-called "new day,"—what is it? What does it amount to? Is there really a new day as compared with that our fathers knew? If there is, what does it mean to us—to sales executives?

I believe emphatically that there is a new day, different in many vital aspects from the day of 20 or 30 years ago,—different even in many ways from the day of half a dozen years back. Consider for just a moment the mere number and size of new industries—automobiles, aviation, radio, the chemical industry, rayon, plastics, electric refrigeration, air conditioning, the photo-electric cell.

In the first decade of this century, 314,000 patents were granted. In the third decade, 421,000. Obviously, we have not yet reached the end of the road.

On the New York Stock Exchange in 1914, an average day saw 142 stocks dealt in. Today, the number is between 900 and 1,000.

Comforts Brought to Us

One characteristic of the new day, as compared with the old, is that today we have our comforts brought to us. In 1914, if you wanted to follow the World Series, you had to go and see it. Today, it is brought to your home.

Yesterday, if you wanted Palm Beach climate in winter, you had to go there. Today, you can duplicate Palm Beach or any other climate in your own room, on a few minutes' notice. Over in Bloomfield we shall shortly demonstrate the first actual shipping of climate,—for if it isn't shipping climate, what is it when you duplicate in 30 minutes the temperature, humidity, sun and cloud and wind conditions of Buenos Aires or Melbourne or Kamchatka? You name the place; we'll produce its climate.

We who lived in the country as boys used to have to chop wood, take out ashes, churn butter, pump water, clean lamp chimneys, lug kerosene and ice, sweep floors and wash dishes. Today, every one of those operations is performed for householders by the current which comes in over a small wire.

When that wire came into the house, drudgery and darkness and cold went out. This is a new day.

Consumer's Trust in Engineer

A second characteristic of this day is the trust which the consumer now reposes in the engineer and the laboratory. The consumer is technical-minded. So he should be, for those things which are having the greatest effect on our physical and to a large extent our mental lives have come to us out of laboratories.

I would not decry the politician, for he is necessary; but it is time some representative of industry pointed out that the white-coated chemist has influenced the way we live more acutely than has the frock-coated orator.

And we like it better, too. Somewhere, today, an unknown technician is bending over a work table, thinking into existence a device or a method which will change our tomorrow much more definitely than all the laws that legislatures can pass in a year.

Industry's Spread

A third characteristic of today is the startling manner in which new industries beget new industries with far-reaching social effects. As a not altogether far-fetched illustration, the mechanical stoker for engines increases the amount of fuel going under the boiler, which makes possible more powerful locomotives, which increases the length of passenger trains, which lengthens the distance a passenger carries his baggage, which necessitates more porters, which enlarges the industrial horizon for the Negro.

Again, in my own industry, the average restaurant which installs air conditioning enjoys a 32% increase in patronage, the average movie theater a 25% increase. I returned recently from a 9,000 mile trip by railroad around the United States; it is my belief that the current increase in railroad travel is due not alone to lower fares, but largely also to the air conditioning of modern trains. A 9,000 mile trip a few years ago, completed in three weeks, would have brought the traveler back here exhausted. After this trip I returned refreshed and rested.

Like every new industry, air conditioning has its effect on adjacent industries. We have given much in-

*Address given before the National Executives, Conference of the National Association of Sales Executives, Inc., New York City, Oct. 16, 1936.

creased business to the sheet metal workers; we have greatly stimulated the plants making insulating materials; we have reached far afield and proved an unexpected but powerful sales aid to the awning industry.

You would be surprised at the difference it makes, in efficiency of air conditioning, to shade the windows of the air-conditioned interior from the direct sun.

Sales Executives' Problem

In view of such new factors as those I have briefly mentioned, what are we sales executives to do? I believe we should observe certain truths. One, the ultimate consumer is the master of markets today. Two, he is accustomed to having the best brought to him. Three, he is impressed by what the engineers tell him.

We should keep him in mind in our selling, and build our advertising appeal to him. Give him engineering facts. Give him research. Give him laboratory data. He likes it and is entitled to it.

We do, in my business. For instance, do you know these facts? The average American home in winter has a humidity of 18 degrees,—actually 2 degrees drier than Death Valley. The average adult requires 3½ pounds of food and 4 pounds of water, but no less than 34 pounds of air, daily. The air in a normal room weighs 170 pounds and is a real, tangible thing.

We announce those facts, and the consumer comes to us and buys our product in ever increasing quantity. He is going to continue doing just that, and the America of tomorrow will utilize air conditioning to a degree now dreamed of only by a few.

200,000 Homes Conditioned in '36

This year 200,000 homes are being air conditioned. A recent questionnaire we addressed to 10,000 people revealed the fact that while only 38% had thought of air conditioning for the present homes, 58% said they would expect a new home to have this facility. The same questionnaire a year hence will unquestionably raise that 58% to 68 or 78%.

Today 58% of the people would expect air conditioning in a new home; but that 58% represents a fast growth of opinion, because only five years ago the percentage would have been zero.

Here, however, we run into a condition which is highly characteristic of my industry. If it is true in the jobs of any of you in this room, it will interest you to know how we handled a genuine sales problem.

No Sales Resistance

Our product got a head start in the public's desires. As soon as people heard about air conditioning, they wanted it. There just wasn't any sales resistance at all. Everyone wanted it, and wanted it at once.

Now, this may sound like Heaven to you, but let me assure you that it came nearer being the opposite of Heaven for us. In the first place, we are not really selling a product, in the sense that a radio is a product, or a sewing machine, or a pair of shoes. We are selling a service, a product, and an installation.

It takes an expert to go to a prospect's place of business or his house and figure out the capacity of the unit we should install, the most efficient insulation, lay-out, and treatment of the job.

Not Enough Experts

When people all over the country began to yell for air conditioning, we didn't have experts enough to go around. There were not enough in the world. To permit the job to be done by men of insufficient technical education would mean dissatisfaction, complaints, and a soured market.

It was a unique position. The factory could turn out the finest product possible, and the market wanted that product. But there was a chasm between, a gap which would be crossed only by trained ventilating and air-conditioning technicians. So we had to create the technicians.

We went into the education business on a large scale, all over the country. Today we run 16 different schools, each in a regional key city. The course is highly concentrated. By lecture, by demonstration, and by actual field work, we teach the young men who come to those schools. When they graduate they are genuinely technical experts in their subject. They are not salesmen in the usual sense, but they are salesmen in the best sense of that maligned word.

This, too, has opened a new field for young men graduating from college.

Air-Conditioning Schools

For several years we held this annual school in Schenectady, and men came to it from around the country. In January of this year, however, we installed a new method: we divided the school up into the 16 regional schools, thereby gaining the advantages of taking air conditioning to the country, and of studying it and teaching it in conditions peculiar to every environment.

We shall repeat this method in 1937, in Boston, New York, Minneapolis, Louisville, Omaha, Albany, Philadelphia, Chicago, Raleigh, Dallas, Rochester, Washington, Cleveland, Atlanta, Los Angeles and Seattle.

Of course, one of the first things we teach our men, the ABC of air conditioning, is the six functions which air conditioning performs. There remains in the public mind considerable confusion as to the correct meaning of air conditioning. Many think it is only air cooling. I will wager that half of the men in this unusually well informed group cannot name those six functions.

Ignorance of Functions

In our questionnaire to the 10,000 people, we discovered that, for every hundred that knew the simplest fact, namely, that air conditioning cools the air, only 82 knew that it warms air, 68 knew that it dehumidifies, 65 were aware that it humidifies, 46 had knowledge that it cleans air, and only 40 knew that it circulates air.

About that matter of cleaning air. I hold in my mind a bottle filled to the cork with nice, black, greasy dirt. That dirt has just been filtered out of the air of the upper East Side residential district of Manhattan, the best living section in New York. It is a tiny part of the grand total of 462 tons of dirt which hangs suspended in the atmosphere above New York City.

Dust in Air Variable

That is a variable quantity. Just last week the New York Meteorological Observatory reported that the air just now is much cleaner than it has been, and that the dust content is actually down to a trifling 1.12 tons per cubic mile over New York. That makes a paltry 345 tons above the whole city. But, said this same recent report, on Sept. 2 the pollution reached the high point of 3.31 tons per cubic mile, or 1,019 tons for the city. This makes pleasant breathing, doesn't it? And yet New York is no worse than the average big community in this respect.

By way of further cheer, you will like to know the contents of this dirt. The sample before you has been analyzed and shown to contain everything, including hair from the neighbor's dog. It has in it tarry oil, petroleum, wood products, chlorides, sulphates, salt, iron, silica and silicates, ammonia, coke, carbon, rock fragments, plaster and other building materials, fibers of wool and hair and cotton. Much of the material is so small that it will pass through filter paper.

Fragments of Steel Rails

Perhaps the most startling thing in this dirt are fragments of steel, which appear to have come from railroad tracks. The analyst made this statement without knowing where the dirt had been collected. As a matter of fact, it was collected in a private home within half a block of the elevated railroad.

Yes, there is a new day. Even a few years ago, we breathed in all this kind of stuff without knowing what to do about it. Today a new industry has appeared to remedy a bad situation. Let me assure you that we are doing everything in our power to see that this new day has the right kind of air conditioning.

York Conditions Dining Room of Fairmont Hotel With 17-Ton Unit

FAIRMONT, Pa.—One of the largest air-conditioning installations in this city was completed recently when the Fairmont hotel equipped its Bavarian room and grill with a 7-ton unit produced by York Ice Machinery Corp., and installed by Monongahela West Penn Public Service Co.

To make the installation more satisfactory, a false ceiling was placed in the hallway connecting the two rooms.

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Essential Factors Considered in Controlling Air Movement

SECTION NO. 5 Air Movement—Ventilation Requirements

There are three prime factors which must be considered in dealing with air movement in connection with air conditioning.

First, sufficient fresh outside air for ventilation must be either drawn into or allowed to infiltrate into the conditioned space.

Second, sufficient air must be circulated through the air-conditioning coils to enable them to do the work necessary to balance the load.

Third, the conditioned air must be distributed and introduced into the conditioned space in such a way that no discomfort results.

Attendant upon these three factors are many problems of varying degree of importance which must be solved if the most satisfactory and efficient system is to be obtained. Among these are prevention of undesirable noise, and the cleaning of circulated air.

Outside Air

The amount of outside air which may be necessary for any particular project, depends primarily upon the number of occupants, and upon the usage of the conditioned space. Obviously a space of heavy occupancy will require more outside air than a space of light occupancy.

A space in which the period of heavy occupancy is of considerable duration or where there is considerable smoking or where the physical activity is high, will require more outside air per person than a space in which the period of heavy occupancy is brief, or where there is little or no smoking, or where the occupants are comparatively inactive. Table No. 5 in the Data Section shows the quantities of outside air per person for various types of occupancy which has proven satisfactory.

Spaces of Light Occupancy

Past experience has shown that in projects of light occupancy per unit of floor space or room volume, where the outside exposure is considerable, the natural infiltration of outside air usually will provide ample ventilation.

On such projects, the additional expense, complication, unsightliness, and potential trouble involved in cutting of openings and installing fresh air ducts and louvers, may be avoided without danger to satisfactory performance or to health and comfort.

Pressure Cuts Down Infiltration

However, on projects where the ventilating requirements are in excess of natural infiltration, the full amount of fresh air required must be drawn in by mechanical means. In this case, natural infiltration may be ignored as it will be practically eliminated by the slight pressure maintained by the mechanical forcing of outside air into the conditioned space.

When outside air is to be drawn into the conditioned space, a considerable reduction in resultant load often may be made by drawing from a lobby or similar space where the air is sufficiently pure and at a temperature below outside temperature.

Reasons for Mixing Air

When outside air is to be supplied mechanically, it should not be introduced directly into the conditioned space, but should be mixed with the air which is to be recirculated and the mixture of outside and inside air should be passed through the air-conditioning coils. This is true for the following reasons:

(a) The dry bulb and dew point temperature of the outside air being higher than the dry bulb and dew

point temperature at the room conditions, the dry bulb and dew point temperature of the mixture of inside and outside air which is passed through the air-conditioning coils will be raised.

Smaller Coil Can Be Used

According to Section No. 3 on "Coil Performance," a rise in dry bulb temperature of entering air results in an increase in sensible capacity, while a rise in dew point temperature of entering air results in an increase in latent capacity, so that a smaller coil may be used.

It so happens in most sections of the United States, that the effect of the rise in dew point temperature resulting from the introduction of outside air is greater than the effect of the rise in dry bulb temperature, so that the latent capacity of the coil is increased more than the sensible capacity, which means that the ratio of latent to total capacity is increased.

This means that a given ratio of latent to total load may be balanced with refrigerant in the coil at a higher temperature. Since this allows a higher suction pressure at the condensing unit, a higher capacity is obtained from the condensing unit.

For this reason, drawing the fresh air in through the air-conditioning coil rather than introducing it directly into the room, often allows the use of a smaller condensing unit.

Circulation Without Drafts

(b) Mixing the outside air with the air which is to be recirculated and passing the mixture through the air-conditioning coils, raises the temperature of the air leaving the coils and entering the room. Obviously this renders easier the problem of distributing the conditioned air without drafts, and maintaining even temperatures.

The reason that air may enter the room at higher temperatures when outside air is passed through the coils than when the outside air is introduced directly into the room, and yet be able to carry the load in the air-conditioned space, is because the outside air load is being met within the coils with that method of outside air introduction, rather than in the conditioned space, as is the case when the outside air enters directly into the conditioned space. Since this leaves a smaller load to be balanced within the room, the air may enter the room at higher temperatures.

Use Same Set of Filters

(c) Introducing the outside air through the air-conditioning coils permits it to be passed through the same set of filters which are used for filtering recirculated air. This allows odors and impurities to be washed from it before it enters the room, by its passage through the wet cooling and dehumidifying coils.

(d) Drawing in the outside air through the air-conditioning coils makes possible the use of the air-conditioning unit fan as a ventilating fan, thus avoiding the expense of an additional fan.

Total Air

The total amount of air which must be circulated through a given type of air-conditioning coil per ton of capacity in order to enable the coil to do its work, depends primarily upon the depth of the coil in direction of air-flow and upon the ratio of latent to total load, the greater quantity of air being required with the shallower coil and with the lighter ratio of latent to total load.

More air is required with the shallower coil because the air temperature drop through the coil is less, so that more air must be handled in order to carry a given load. More air is required with the lighter ratio of latent to total load because with the lighter ratio, a higher refrigerant temperature is used in the coil. Hence, the air temperature drop through the coil is less, so that more air must be handled in order to carry a given load.

Table No. 13 in the Data Section indicates the approximate total air per ton of load which must be circulated at various ratios of latent to total load, at each coil depth.

By noting the total air which must be circulated as described from Table

No. 13, and the required outside air from Table No. 5, the dry bulb and dew point temperatures of the resultant mixture of air may be read from Table No. 14.

Care should be taken that the total air circulated results in an air change within the conditioned space between the limits of four per hour and 12 per hour, as an air change of less than four is insufficient to obtain even temperature distribution, eliminate odors, and prevent general stagnation, while an air change of greater than 12, renders difficult the prevention of drafts.

Distribution

Duct work must be used in connection with central system and in connection with air-conditioning units which must be remote from the space which they are to condition, or whose capacity is so great that the space which they can serve involves the throwing of air farther than is practicable, or whose location due to the peculiar shape or requirements of the space to be conditioned must be such that proper distribution cannot be obtained by throwing the air directly from the unit.

Duct work should be of approved construction as to materials, gauges, and types of joints, hangers, etc. as given in Table No. 23 in the Data Section, and of approved design, with easy turns and transformations.

'Constant Friction' Duct Design

Velocities should be kept below those that would be productive of noise which would be objectionable on the particular project under consideration. Ducts should be designed upon a "constant friction" rather than upon a velocity basis, as the "constant friction" system is superior, both as to economy and air distribution. Ducts may very satisfactorily be sized by the use of Tables No. 20 and No. 21 in the Data Section.

More important even than the duct system, is the distribution of the air when it is delivered or thrown into the room. An installation which is perfect in all other respects, may be a total failure in the function which is its only excuse for being (that of producing comfort) because of improper air delivery.

The velocity, direction, or temperature of entering air may be such that the conditioned space is a maelstrom of drafts, or a contrast of torrid and frigid zones, or an exhibition of air noises, or a combination of all three, even though the capacity of the equipment is exactly right.

Problems Differ from Warm Air

Many sad experiences have been the lot of engineers who have failed to realize that the problems of warm air distribution and cold air distribution are very dissimilar in many respects and who have applied to the distribution of cold air, certain practices which are satisfactory in connection with the distribution of warm air.

The fact that warm air tries to rise, while cold air tries to fall, accounts for many of these dissimilarities.

For this reason if cold air is delivered into the room at a low velocity from a wall inlet, it immediately spills to the floor, producing cold drafts and cold areas. Reducing the entrant velocity under such conditions in an effort to eliminate drafts, usually makes matters worse.

Cold air must be given sufficient velocity to prevent it from falling into the occupancy zone until it has been tempered by mixing with the room air. The proper entrant air velocity is a function of temperature differential, the distance of throw, and the vertical distance through which it can fall without striking the occupants.

The greater the temperature differential between room air and entering air, the greater is the tendency of the air to fall, therefore, the greater must be its entrant velocity in order to throw it across the space to be conditioned.

Effect of Air Velocity

If its velocity of entry is too great for the distance across the room and for the temperature differential, the air will strike the wall opposite from its point of entry and spill down this wall, resulting in a cold zone along the floor near it.

If the entering air velocity is insufficient for the distance across the room and for the temperature differential, it will spill from the inlet onto the floor, resulting in a cold zone at and around its point of fall, and a warmer zone beyond.

When the air enters at a considerable velocity, an "ejector" effect results, which increases as the entrant velocity increases, and which draws in a considerable quantity of air at room temperature. This mixing action results in a temperature rise of the air stream so that if the entrant velocity is great enough, the temperature of the air stream will be brought up to a point very little below the temperature of the room by the time it loses its velocity and falls toward the floor.

Obviously this action makes possible (Concluded on Page 14, Column 3)

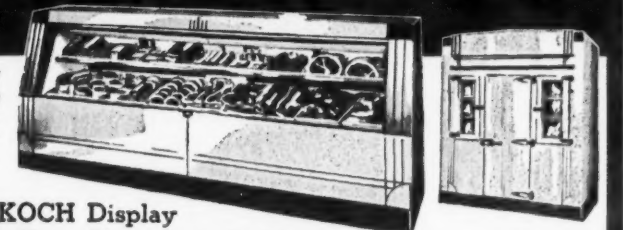
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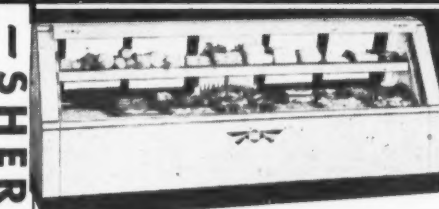
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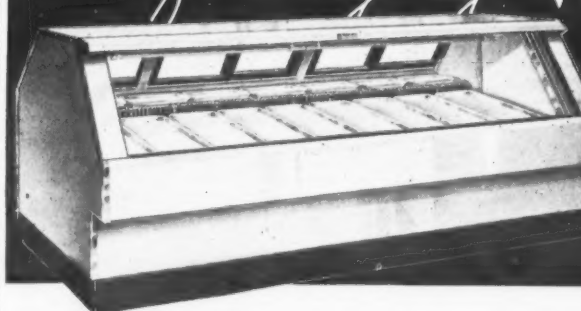
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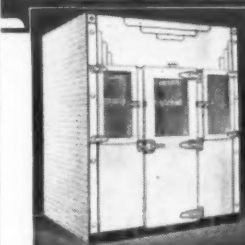
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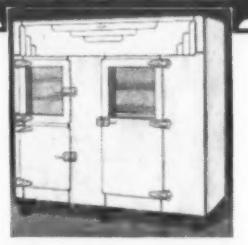
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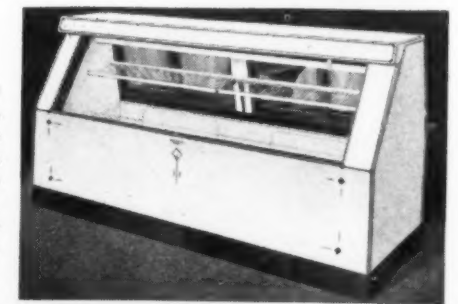
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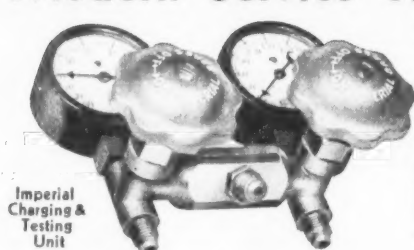
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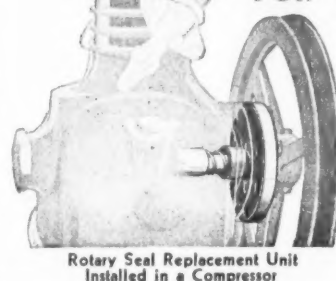


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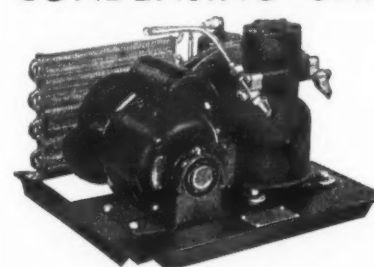
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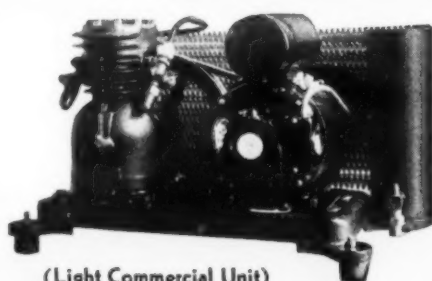
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Distribution of Air to Meet Ventilation Requirements

(Concluded from Page 13, Column 3) ble the use of lower entry temperatures without discomfort, and is of greater assistance in obtaining even temperature distribution and in avoiding the sensation of drafts.

The ideal velocity is one which is just sufficient to throw the air at its entry temperature differential across the conditioned space so that the velocity is practically nil at the opposite wall above head height. At such a velocity, the maximum mixing effect obtainable under the circumstances will be obtained, so that the air will tend to settle down evenly over the entire space at a temperature not far below that of the room. As a result, there will be no cold zones, either along the opposite wall, nor a short distance in front of the entry grille.

Use of Diffusing-Type Grilles

The result may be further improved by making use of diffusing-type grilles which will throw a sheet of conditioned air along the ceiling to become tempered by mixing and fall gently and evenly over the entire conditioned area.

In utilizing velocity because of its mixing and diffusing effect, great care must be taken to prevent air currents from impinging directly upon the occupant, whether as the result of direct throw from the conditioned air inlet, or as a result of deflection from beams, columns, large lighting fixtures, walls, or other obstructions.

The greater care must be taken with the higher velocities. In addition to selecting the proper velocity as described above for the particular temperature differential between room and entering air, and for the distance between the air inlet and the opposite wall, it is also necessary to have sufficient ceiling heights to allow the desired air distribution to take place and the air velocity to die

out well above the zone of occupation. If the ceiling height is insufficient to permit this, the velocity and temperature differential of inlet air must be kept down, and many closely spaced conditioned air inlets must be used.

It is necessary also to introduce the air into the room in such a way that it will meet with no obstructions which will deflect air currents downward into the occupancy zone. For example, a beam which obstructs airflow may deflect the entire air stream downward resulting in a cold zone under the beam, and a warm zone beyond.

The approximate distance of throw and fall for different temperature differentials is given by Table No. 19 in the Data Section.

System Can Heat and Cool

Although, as stated above, it is true that the air distribution system which is designed only for heating service may be very unsatisfactory if used for cooling service, fortunately it is true also that it is possible for a system to be designed so that it will function satisfactorily for both types of service.

Generally, the air supply grille should be located at a sufficient height above the floor, that the entrant air velocities necessary for good distribution over the room cannot produce perceptible drafts within the zone of occupancy. Generally, a height of 6 feet 6 inches in a residential or similar room will suffice, although in very large rooms, greater heights may be necessary.

In rooms of a size common to public buildings, the higher velocities made necessary by the greater distances through which the air must be thrown for good distribution, generally require a height above the floor of about 8 feet 6 inches, although very large rooms may require heights of 10 feet or 12 feet.

As a rule, the safer practice is to locate the supply grille about as high as possible. Very frequently, the ceiling supply may be used to advantage. With this type of supply, a very satisfactory arrangement is to locate a flat plate below the ceiling supply opening, the plate being somewhat

larger than the opening and located at such a distance below the ceiling that the air is delivered horizontally in a thin sheet at the ceiling in the desired direction or directions.

The same rules for entrant air velocity apply to this type of supply as to the wall supply grille. In very large spaces, this type of ceiling supply may be used to great advantage as such ceiling supplies may be so spaced that the distance or throw (hence, entrant air velocity) is much less than would be required, were all air supplied from wall type grilles.

Direct Air at Heavy Loads

Supply grilles must be so located that an ample supply of air is directed at all heavy loads, whether such loads be due to occupants, appliances, or exposed building surfaces. In the case of heating service an especially good sweep of air must be directed against all exposed walls and windows.

Generally, the best air circulation and distribution with a minimum of "dead" areas will be obtained if the vent grille is located in the same wall as the supply, provided that the air is supplied at ample velocity. In cases where supply grille velocity is insufficient to secure good distribution, air may be induced into "dead" areas by locating vent grilles in such areas.

In heating service, vent grilles should be at the floor level, as they will remove the cooler air from the room and will not "short circuit" air directly from the supplies.

In cooling service, the preferable location for the vent grille is at the ceiling, at such a point that the air supply will not be directed at it by a supply grille, as this arrangement will cause the warmer air to be vented from the room as it is warmed and so rises. This is especially true for spaces of heavy occupancy or appliance loads.

However, in residential or similar installations which are employed for both heating and cooling, a very satisfactory arrangement is to locate the supplies at the ceiling and the vents at the floor. A discussion and description of this particular type of residential installation is given in Section No. 7.

Patents

Issued September 22, 1936

2,054,809. AIR CONDITIONING METHOD AND MEANS. Walter L. Fleisher, New York, N. Y. Application Feb. 28, 1935. Serial No. 8,603. 18 Claims. (Cl. 261-112)

2,055,022. APPARATUS FOR COOLING LIQUIDS. Wilbert Copeland Wood, Toronto, Ontario, Canada. Application May 12, 1933. Serial No. 670,628. 7 Claims. (Cl. 62-101)

2,055,033. TEMPERATURE CONTROL SYSTEM AND APPARATUS. George D. Kingsland, Minneapolis, Minn., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn. Application May 28, 1934. Serial No. 727,989. 14 Claims. (Cl. 236-47)

2,055,056. UNIT AIR CONDITIONER. Fred M. Young, Racine, Wis., assignor to Young Radiator Co., Racine, Wis. Application Aug. 12, 1935. Serial No. 35,739. 6 Claims. (Cl. 257-137)

2,055,071. SEALING MEANS FOR HEAT EXCHANGERS. Erik Otto Eriksson, Lid- ingo, Sweden, assignor to The Air-Pre-heater Corp., Wellsville, N. Y. Application Nov. 5, 1931. Serial No. 573,119. In Sweden Nov. 6, 1930. 13 Claims. (Cl. 257-6)

2,055,133. VALVE. Robert E. Newell, Irwin, Pa., assignor to Robertshaw Thermostat Co., Youngwood, Pa. Application Sept. 19, 1930. Serial No. 482,939. 12 Claims. (Cl. 137-139)

2,055,158. METHOD AND APPARATUS FOR REFRIGERATION. Edward Rice, Jr., Philadelphia, Pa., assignor to International Carbonic, Inc., Wilmington, Del. Application July 14, 1930. Serial No. 467,999. 35 Claims. (Cl. 62-31)

2,055,191. ELECTRICALLY OPERATED AND CONTROLLED REFRIGERATING APPARATUS. Glenn F. Zellhoefer, Bloomington, Ill. Application May 22, 1935. Serial No. 22,825. 3 Claims. (Cl. 62-5)

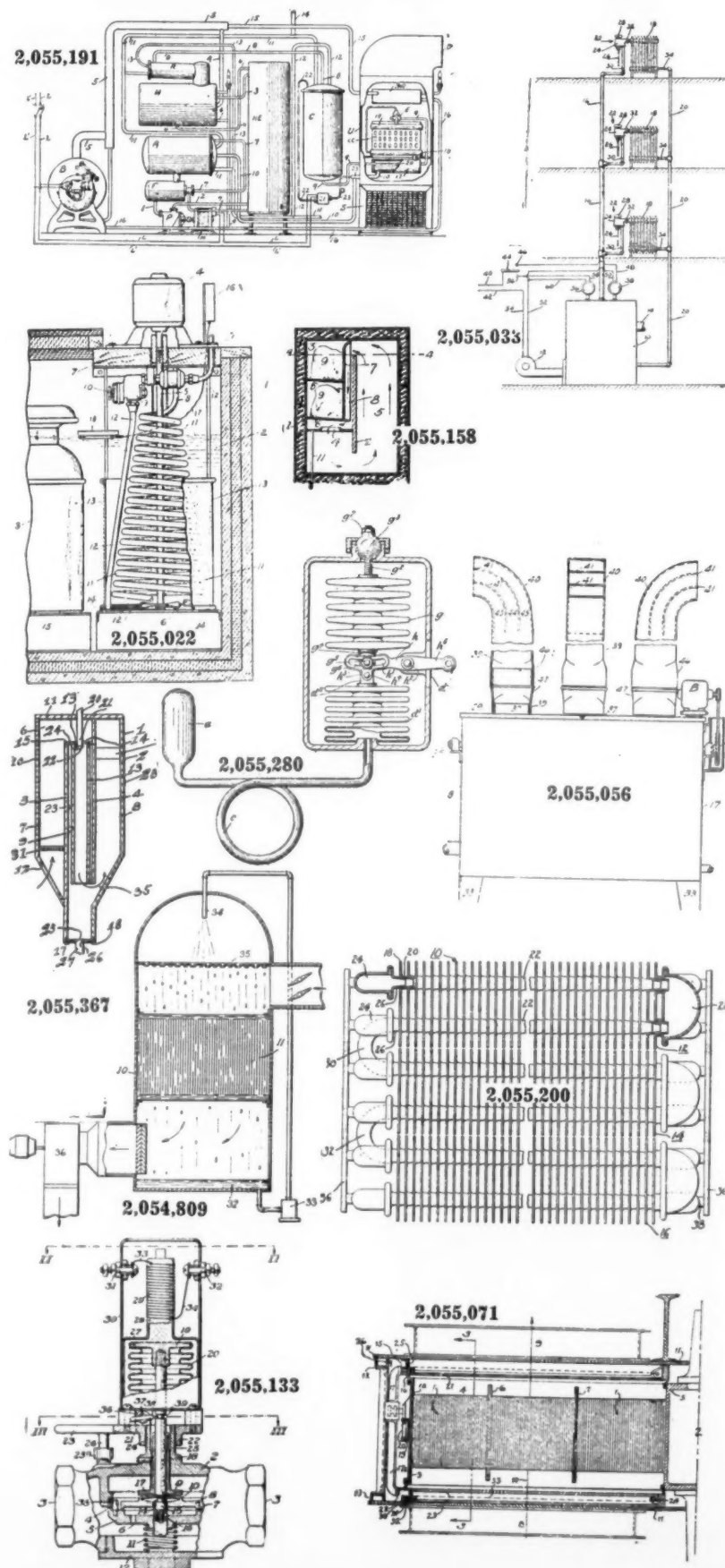
2,055,200. REFRIGERATING APPARATUS. John Karmazin, Huntington, Ind., assignor to Karmazin Engineering Co. Application May 7, 1935. Serial No. 20,205. 2 Claims. (Cl. 257-255)

2,055,280. THERMOSTAT. Edward Dod- son, Streatham, London, England. Application April 25, 1935. Serial No. 18,231. In Great Britain Nov. 19, 1934. 1 Claim. (Cl. 297-3)

2,055,367. REFRIGERATING SYSTEM. Elmer E. Scott, Dayton, Ky. Application Dec. 11, 1933. Serial No. 701,806. 3 Claims. (Cl. 261-116)

PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.



Service Methods

Replacement Control for Absopure Refrigerator

Briggs-Barrett Electric Co.
205 Fifth St., Logansport, Ind.
Editor:

I have been advised that you can help us locate parts that we need for refrigerator service.

We need a cold control or thermo-electric switch for an Absopure refrigerator (Baby Grand). The refrigerator was made by Product General Necessities, Detroit, Mich. The switch originally was manufactured by the Bishop & Babcock Mfg. Co., Cleveland.

We have tried a couple of places without results and will be very grateful for any help.

Answer: We suggest that you get in touch with Universal Cooler Corp., 7424 Melville Ave., Detroit, which bought out the Absopure interests several years ago, or the Bishop & Babcock Co., 4901 Hamilton Ave., Cleveland, which still makes cold controls for refrigeration systems.

Necessary Approval On Assembled Machine

107 Smith St., Lynbrook, N. Y.
Editor:

I will appreciate your advice on the following question:

If I assemble a condensing unit made up of parts manufactured by such companies as Century, Minneapolis-Honeywell, Brunner, M & E, Universal, Worthington Pump, and Wolverine Tube, will it be necessary to have this unit approved by the N.B.F.U. or any other authorities?

Answer: We are reasonably sure that you would not need approval of such an assembled unit by any particular authority, but for the protection of yourself and your customer, it might be a good idea if the machine you assemble conforms to the latest Underwriters' Laboratories rules on commercial refrigeration equipment installation. These were published in the Sept. 4, 1935, issue of REFRIGERATION NEWS.

Refrigerant Dryers for Commercial Systems

Stacy S. Bauer
General Refrigeration Engineering
105 Atlantic St., Bridgeton, N. J.
Editor:

Please advise what companies make solutions to add to a refrigerating system, to eliminate or neutralize moisture when in SO₂, methyl, and Freon systems.

We understand this is best accomplished if put in the system when first installed.

Answer: We refer you to the installment of K. M. Newcum's COMMERCIAL SERVICE MANUAL, now appearing serially in AIR CONDITIONING AND REFRIGERATION NEWS, which was published in the Aug. 26, 1936, issue of the NEWS. This article is entitled "The Use of Dryers in Commercial Refrigeration Systems."

Eight Years Experience

J. Henderson Stock
Refrigeration, Engineering & Maintenance
6 E. Simpson St., Mechanicsburg, Pa.
Gentlemen:

Complying with your suggestion contained in the August 26, 1936 issue of REFRIGERATION NEWS, I would ask that you list the writer as the owner of a service organization capable of servicing domestic and commercial electric refrigeration equipment.

The writer has 8 years service experience in both domestic and commercial service work. Have a sales room and a service repair shop.

If you furnish to manufacturers a mailing list of service men to receive service data, please include the writer's name.

J. HENDERSEN STOCK

VIRGINIA SMELTING CO.
WEST NORFOLK VIRGINIA
EXTRA DRY ESOTOOL
LIQUID SULPHUR DIOXIDE
V-METH-L
VIRGINIA METHYL CHLORIDE

131 State St. Boston—76 Beaver St. New York

Servicing Automatic Expansion Valves

2421 Akins Drive, St. Louis, Mo.
Editor:

Will you please tell me a definite way to tell when an automatic expansion valve is not working properly.

Answer: We suggest you read the service article by D. D. Wile, in the Aug. 22, 1934, issue of REFRIGERATION NEWS, entitled "How to Service Machines Using Automatic Expansion Valves." Included with this article is a very convenient chart listing various complaints and observations made from study of domestic units equipped with automatic expansion valves.

Service Data on Belding-Hall ElectrICE

205 Irene St.
Etna Sta., Pittsburgh, Pa.
Editor:

Mr. Deissler of the Deissler Machine Co. in Greenville, Pa., told me that I could get information about the Belding-Hall refrigerator from you. We have a Belding-Hall ElectrICE, 1929 model, and would appreciate any information you could give us on its upkeep and repair.

Answer: Instructions for servicing the Belding-Hall ElectrICE refrigerator are given in Chapter 13 (pages 280 to 289) of the MASTER SERVICE MANUAL. This book of 456 pages may be obtained by sending \$3.00 to Business News Pub. Co., 5229 Cass Ave., Detroit, Mich.

Service Information on Majestic Conventional

716 North Seventh St.
Atchison, Kan.
Gentlemen:

Would you please send me a copy of REFRIGERATION NEWS, as I have a broken down Majestic I would like to fix, and was advised your magazine had a lot of replacement advertisements in it.

Answer: Service information on the Majestic standard refrigerator was published in the Sept. 12, 19, and 26, 1934, issues of REFRIGERATION NEWS; and on the Majestic hermetic refrigerator in the Aug. 16, 1933, issue of the NEWS. Also see pages 58 and 59 and Chapters 18 and 19 (pages 337 to 374) of the MASTER SERVICE MANUAL published by this company.

Patent Rights on Rotary Seals & Capillary Tubes

Metropolitan Refrigeration Service
1947 Flushing Ave., Brooklyn, N. Y.
Editor:

Will you kindly let us know who holds patent rights on capillary tubes and rotary seals.

Answer: Some patent rights on rotary seals are held by the Rotary Seal Co., 809 W. Madison Ave., Chicago, and on capillary tubes by Isaac Rice, Jr., 295 Fifth Ave., New York City.

U. S. Hermetic Service Manual

Macklam Refrigerator Sales & Service Corp.
220-222 W. Huron St.
Chicago, Ill.
Editor:

Do you have a service manual on the U. S. Hermetic refrigerator?

Answer: Complete instructions for servicing the U. S. Hermetic refrigerator are given in Chapter 22 (pages 392 to 400) of the MASTER SERVICE MANUAL.

Well Pleased

General Refrigerator Co.
Refrigeration Engineering and Repair Service
Hill & Slope Sts., Nanticoke, Pa.
Dear Sirs:

Enclosed find check for \$3.00 for which please send me your MASTER SERVICE MANUAL. Also place my name on your mailing list to receive all trade literature and catalogs.

I am well pleased with K. M. Newcum's column in your weekly REFRIGERATION NEWS.

W. C. Johnson
Frigidaire Sales—Service—Installation
Norfolk, Va.
Dear Sirs:

Please place my name on your mailing list for Refrigeration Catalogs.—W. C. Johnson, 409 24th St., Virginia Beach, Va.

Commercial Service Manual

This week's instalment of the Commercial Service Manual, by K. M. Newcum, has been omitted because of the failure of certain necessary illustrations to arrive in time for publication. The series will be continued next week with a discussion of compressor shut-off service valves.

Imperial Brass Host To Chicago Service Engineers' Society

CHICAGO—Floats, valves, fittings, and tools were discussed by the local chapter of Refrigeration Service Engineers' Society at the organization's October meeting, under the supervision of President Paul Jacobson.

Officials of Imperial Brass Mfg. Co., host of the meeting, spoke on various phases of their company's activities and products. The meeting was arranged by Harold T. McNellis, Imperial's Chicago sales representative.

In discussing the importance of service men to the advancement of refrigeration, Imperial's Vice President W. A. Leonard emphasized the value of the Service Engineers' Society as a clearing house for many valuable ideas.

George Franck, special engineer on float valves, discussed this subject fully, describing in detail both the high and low side floats produced by Imperial. R. D. McIntosh, chief engineer, reviewed current developments in valves, fittings, and service tools, especially those of Imperial manufacture.

Various displays of Imperial products also featured the meeting. Outstanding among these was a sign formed by frosted cooling tubes, shaped to form the Imperial trademark.

General Plastics, Inc. Develops New Resins

NORTH TONAWANDA, N. Y.—A new type of flexible phenolic resins, combining bonding strength, water, acid, and alkali resistance, and the friction resistance of conventional resin with a high degree of flexibility, recently has been developed by General Plastics, Inc., here.

These new Durex resins are used widely for impregnating fabrics, woven belting, brake lining, and the like, and are said to be so flexible that a fabric impregnated with them can be sharply creased repeatedly without a sign of fracture.

Flexible abrasive cloth and waterproof sandpaper treated with these resins have greater water and oil resistance, and brake linings of the woven type show much longer wear and a more uniformly stable coefficient of friction, according to reports of company officials.

Harry Alter's 1936-37 Catalog Now Out

CHICAGO—Harry Alter Co. recently issued a 96-page catalog listing all makes of refrigeration parts and supplies which it is offering to the trade for the winter of 1936-37.

The catalog lists several new lines, chief among which are Ranco commercial controls and additional sizes of Mills condensing units. Many price revisions have also been made.

Lewis-Shepard Publishes Booklet on Cranes

WATERTOWN, Mass.—Lewis-Shepard Co. announces a booklet describing its line of hand and electric-powered portable cranes. The cranes are adaptable to a number of uses in servicing household refrigerators, particularly those having top-mounted units.

Universal Cooler Issues Recipe Sheets

DETROIT—Universal Cooler Corp. is making available to dealers a sheet of refrigerator recipes, intended as handout pieces at anniversary weeks, cooking schools, and similar events attended by housewife prospects.

The recipe sheets, all in one piece, for convenience in distribution, cover ice creams, frozen salads, ices and sherbets, and cakes and cookies. Cut apart, the recipes fit into a standard 3x5-inch card file. Sections are so arranged that the title of each recipe is always in view.

The Buyer's Guide

Special rates apply to this column only.
Write Advertising Dept. for full information.

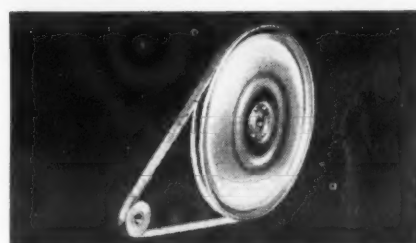
LEADING MAKERS OF REFRIGERATING AND AIR CONDITIONING EQUIPMENT STANDARDIZE ON

Dayton V-BELTS

● Because of their outstanding advantages Dayton V-Belts have been used as original equipment on leading makes of air conditioning equipment, electric refrigerators, washing machines and other appliances for many years.

Dayton V-Belts are the logical choice because they provide silent, dependable transmission—because their powerful grip prevents slippage—because they run smoothly without weaving, twisting or vibrating.

A nearby distributor carries a complete stock of Dayton V-Belts at all



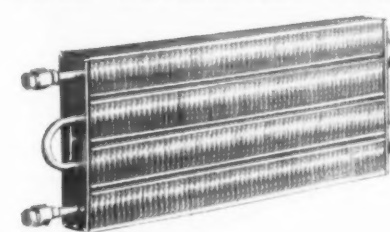
Whether for Fractional or a Thousand H.P. there is a Dayton V-Belt Drive for the job.

times and can quickly supply you. Write us for price list and complete information.

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World's Largest Manufacturer of V-Belts

FINNED EVAPORATOR AND CONDENSER COILS

FINNED COILS FOR ALL PURPOSES
STEEL—COPPER—ALUMINUM AND SPECIAL METALS
Positive thermal bond between metals of proper thickness to assure maximum heat transfer.



JACKSON ACME INDUSTRIES Inc. MICHIGAN

CONDENSERS

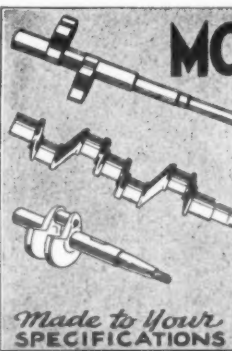


Exact Duplicate replacements for condenser-start motors. Just the thing for critical servicing of electric refrigerators. ● Stocked by leading jobbers everywhere. ● Descriptive bulletin listing all popular makes of refrigerator motors and their condenser replacements, available on request.

AEROVOX CORPORATION

172 Washington St. Brooklyn, N. Y.

AEROVOX



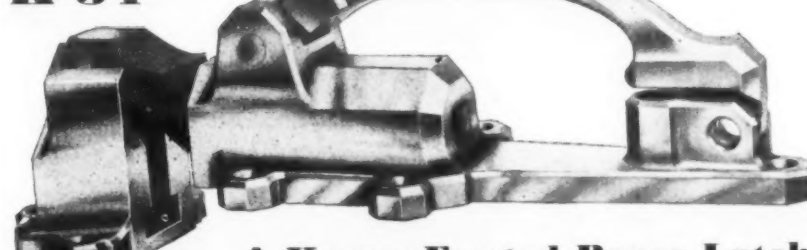
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Cut your Shaft costs the "Modern" way... Send your blueprints and ask us to quote you on your specifications for Refrigerator Shafts. "Modern" methods of shaft making guarantee quality, accuracy, service.

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K-54B



A Kason Forged-Brass Latch of Unsurpassed Quality

For simplicity of construction, ease of operation, rugged strength and massive sealing power there is no latch which compares with K-54B. This, the largest of KASON'S comprehensive line of refrigerator latches, is the standard size for heavy, walk-in doors. Its unsurpassed quality has been emphatically demonstrated in many years of faultless, gratifying service.

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